

National Forestry Conference

PROTECTING OUR TREES AND FORESTS

The importance of safeguarding Ireland's
forests from pests, diseases and other damage



Report on National Forestry Conference
Zoom Webinar
8 October, 2020
Dublin

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Acknowledgements

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October 2020

Conference PowerPoint presentations are available at www.wood.ie and www.societyofirishforesters.ie

National Forestry Conference Webinar.
Numbers registered: 273
Numbers attended: 250



Contents

AGENDA FOR THE NATIONAL FORESTRY CONFERENCE.....	4
FOREWORD.....	5
<i>Pippa Hackett, Minister of State for Land Use, Forestry and Biodiversity at the Department of Agriculture, Food and the Marine</i>	
INTRODUCTION, SOCIETY OF IRISH FORESTERS	7
<i>Ken Bucke, President, Society of Irish Foresters</i>	
INTRODUCTION, NEED FOR RESEARCH SUPPORT AND VIGILANCE IN PROTECTING OUR FORESTS	9
<i>Donal Magner, Forestry editor Irish Farmers Journal</i>	
IRISH BIOENERGY ASSOCIATION DELIGHTED TO FACILITATE THE FORESTRY CONFERENCE	12
<i>Seán Finan, Chief Executive IrBEA</i>	
ACTUAL AND POTENTIAL THREATS TO FORESTS THROUGHOUT IRELAND	14
<i>Dr Richard O’Hanlon, Principal Plant Pathologist in Grassland and Plant Science Branch, Agri-Food and Biosciences Institute (AFBI), Belfast</i>	
SAFEGUARDING THE FOREST	17
<i>Tom McDonald, Inspector, Forest Health, Forest Service. Department of Agriculture, Food and the Marine</i>	
AS THE SAWMILLER SEES IT	20
<i>Brian Murphy, CEO Balcas Ltd. and Chairperson FII</i>	
AS THE GROWER SEES IT	23
<i>Mechteld Schuller, ITGA and Director, Commercial Forestry Services</i>	
NEW FINDINGS IN ASH RESEARCH.....	28
<i>Dr. Miguel Nemesio-Gorriz, Research Officer, Teagasc</i>	
PEST RISK ANALYSIS IN PROTECTING COMMERCIAL FORESTS.....	30
<i>Dr. Melanie Tuffen, Postdoctoral Researcher and Plant Health Science Advisor, Department for Environment, Food and Rural Affairs, UK</i>	
INFORMATION ON WOOD MARKETING FEDERATION, SOCIETY OF IRISH FORESTERS AND IRBEA.....	32

Comments on presentations by: Gerhardt Gallagher (15); Pacelli Breathnach (18); Donal Magner (23); Marina Conway (25); Donal Whelan (29); and Tom Houlihan (31).

Agenda for the National Forestry Conference

PROTECTING OUR TREES AND FORESTS

The importance of safeguarding Ireland's forests from pests, diseases and other damage

09.30 Introduction by conference chairperson Donal Magner, *Wood Marketing Federation* and *Forestry Editor, Irish Farmers Journal*.

KEYNOTE ADDRESS

09.35 Pippa Hackett
Minister of State for Land Use, Forestry and Biodiversity at the Department of Agriculture, Food and the Marine.

SESSION 1: THREATS TO IRELAND'S FORESTS

09.55 Actual and potential threats to forests throughout Ireland.
Dr Richard O'Hanlon, *Principal Plant Pathologist in Grassland and Plant Science Branch, Agri-Food and Biosciences Institute (AFBI), Belfast.*

10.15 Safeguarding the forest.
Tom McDonald, *Inspector, Forest Health, Forest Service. Department of Agriculture, Food and the Marine.*

10.30 Short break (10 minutes)

SESSION 2: THREATS TO THE FORESTRY AND FOREST PRODUCTS SECTOR

10.40 As the sawmiller sees it.
Brian Murphy, *CEO Balcas Ltd. and Chairperson FII.*

11.00 As the grower sees it.
Mechteld Schuller, *ITGA and Director, Commercial Forestry Services.*

SESSION 3: PROTECTION, TREATMENT AND DISCUSSION

11.20 New findings in ash research.
Dr. Miguel Nemesio-Gorritz, *Research Officer, Teagasc.*

11.40 Pest risk analysis in protecting commercial forests.
Dr. Melanie Tuffen, *Postdoctoral Researcher and Plant Health Science Advisor, Department for Environment, Food and Rural Affairs, UK.*

12.00 Open forum Q & A

12.30 Close of conference: Ken Bucke, *President, Society of Irish Foresters.*

Foreword



Pippa Hackett
Minister of State for Land Use,
Forestry and Biodiversity at the
Department of Agriculture, Food
and the Marine

We are fortunate in Ireland, when it comes to the health of our forests.

Largely because of our island status, the relative newness of our forest estate and the implementation of import controls, we do not have the range of forest pests and diseases that are endemic on the continent and further afield.

However we cannot be complacent. Serious threats from pests and diseases are on the increase.

In recent years, due to globalisation and trade, and the impacts of climate change, there have been disease outbreaks in trees and forests. Perhaps the most notable of these has been ash dieback disease which is caused by the fungus *Hymenoscyphus fraxineus* and *Phytophthora ramorum*, a fungus like organism, which can damage and kill plants and trees it infects.

We must be vigilant in the fight against such infestations.

The Department of Agriculture, Food and the Marine (DAFM) is Ireland’s National Plant Protection Organisation (NPPO) and is responsible for the implementation of the Plant Health Regulation and the Official Controls Regulation. This work involves import controls, export certification and surveys of the national forest estate for a range of protected zone and other harmful organisms.

In December 2019, DAFM launched its Plant Health and Biosecurity Strategy. The Strategy, which was developed with the help of a consultative period, is Ireland’s response to a number of critical factors including the emerging threats from growing global trade in plants and plant products as well as the associated movement of new and emerging plant pests and diseases. It is underpinned by key strategic principles around anticipating risk, implementing Surveillance and Management as well as building Awareness and Communication.

The strategy outlines the importance of plant health biosecurity for Ireland, and aims to ensure that all stakeholders are aware of the risks to plant health in Ireland, and their role in and responsibility for, reducing those risks.

Another area which requires vigilance is that of potential imports.

Issues with felling licencing, which are essential for landowners to manage their crop, have been to the fore recently and we are aware of the consequential possibility of importing roundwood from Germany and perhaps other countries. Such trade could carry significant potential risks around the introduction of harmful bark beetles, *Ips typographus* in particular. DAFM would urge any prospective importer to engage fully with the Department for guidance on import requirements and Departmental inspection arrangements.

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That is why it was so welcome to see the United Nations General Assembly adopt a resolution, proclaiming 2020 as the International Year of Plant Health (IYPH). Ireland (DAFM) has been a strong supporter from the start of this process, both conceptually and financially.

The main objectives of this year-long worldwide initiative are to:

- Raise the awareness of the public and political decision makers at the global, regional and national levels about plant health and,
- Promote and strengthen national, regional and global plant health efforts and their resources in the light of increasing trade and new pest risks caused through climate change.

Sadly, COVID-19 impacted significantly on a range of planned events (of which this is one) but I very much hope that IYPH planned activity can be extended into 2021. Such activity is an essential part of all of our efforts to protect our forests and ensure their continuing health and strong reputation.

Pippa Hackett
Minister of State for Land Use
Forestry and Biodiversity at the Department of Agriculture
Food and the Marine

Introduction



Ken Bucke
President
Society of Irish Foresters

Ken Bucke is a Forestry Inspector in the Environment Section of the Department of Agriculture, Food and the Marine - Forest Service. He is a Professional Member of the Institute of Environmental Sciences.

Society of Irish Foresters

Plant Health, and in particular forest health, is crucially important to all stages of the forest cycle and in all areas of the forestry and forest products sector, yet it is often overlooked. Therefore, I am pleased that this conference is highlighting the various aspects of this very complex discipline.

Increasing numbers of harmful organisms are being detected throughout Europe, including findings of new species; expanding ranges of existing species and increases in population sizes of indigenous species.

Ireland has heretofore enjoyed a largely pest free status which is maintained in part by our island status and the designation as a Protected Zone for a number of pests that exist elsewhere in the EU. However, the outbreaks of *Phytophthora ramorum* and Chalara ash dieback, along with the recent finding of Oak Processionary Moth in a park in Dublin for example, highlight the need for constant vigilance by everyone in the sector.

The ever expanding growth of global trade poses a major threat to our forests as everyday items associated with trade such as pallets and dunnage, can act as vectors for serious pests like the citrus and Asian longhorn beetles, both of which have a wide host range. Climate change is also allowing some harmful organisms to spread and expand their range and our recent milder winters facilitate increases in the populations of indigenous pests. While these population spikes may have been dismissed in the past, localised damage by species such as the spruce aphid, ash sawfly larvae and the nut bud moth on alder has been noted.

However, there is room for positivity. DAFM recently launched Ireland’s first Plant Health and Biosecurity strategy which focuses on building the key areas of preparedness, capacity and awareness. Research and pest risk analysis continues to advance with new species being identified and understood – the FORM project has generated excellent outputs in relation to identifying threats to Sitka spruce, for example. The new EU Plant Health Regulation, which replaced the previous Plant Health Directive, was introduced in November 2019 and should help to increase the speed of applying measures to tackle emerging pests and promote increased stakeholder engagement and awareness.

The expanding network of forest monitoring points, additional Forest Health Inspectors and new port facilities for import controls will aid in early detection of pests as will the continued implementation of ISPM 15. However, it is incumbent on all of us who work in the sector to be constantly alert to the risks posed by harmful organisms as we go about our work, to apply biosecurity measures when moving between work sites, to report observations of suspicious ill health in trees and to be conscious of the risks involved when importing, not only plant products but all goods.

Ken Bucke
President
Society of Irish Foresters



Donal Wagner
Forestry editor *Irish Farmers Journal*

Donal Wagner, editor, forester and forest owner, has worked in the public service and in his current roles as forestry communications consultant and forestry editor of the *Irish Farmers Journal*. He holds a Master's degree in forestry from UCD and an MA from DCU specialising in forestry in literature. He is the author of *Stopping by Woods: A Guide to the Forests and Woodlands of Ireland* and co-editor of a number of publications. A recipient of the RDS-Forest Service Judges' Special Award for his contribution to Irish forestry, he serves on a number of policy bodies.

Seán Lenihan, Kestrel Forestry Consultants Ltd inspects a young Japanese larch and beech plantation. Continuous inspection is recommended to monitor forest health.

NEED FOR RESEARCH SUPPORT AND VIGILANCE IN PROTECTING OUR FORESTS

Despite our island location, our forests are vulnerable to attacks from disease and insect pests.

Threats to forests and woodlands come in many guises. Large-scale forest fires are the most obvious threats as witnessed in recent years in Amazon countries particularly Brazil and Australia but also in the northern hemisphere in California and Oregon in the US and in Mediterranean countries. Ireland largely escapes devastating fires and natural causes such as wind damage. Yet Irish forests are not immune to threats experienced in other countries especially from disease. Our island location minimises external threats, but we have experienced sporadic destruction from wind and fire as well as from silent fungoid killers.

When we agreed the theme for this conference – "Protecting our Forests" – towards the end of 2019, we were unaware of the threat of Covid-19 which at the time of writing shows no sign of abating. We decided on the overarching topic of forest protection for two reasons: global and local.

- Global: Plant health is linked with climate change so it is a global issue. The conference is an opportunity to mark the International Year of Plant Health (IYPH) in 2020. The United Nations General Assembly had declared 2020 as the IYPH, which was endorsed by the Food and Agriculture Organization (FAO). The conference is compatible with the FAO's objective to raise awareness of plant health in particular tree health.
- Local: The conference would address the very real threat of insect pest, disease and other agents to Irish forest, woodland, hedgerow and parkland trees.

Dutch elm disease was the first warning of how a disease can virtually wipe out a species right on our doorstep. This disease, which took hold in the 1970s, received less attention in Ireland than it did in the UK where elm had greater cultural and economic significance but its destruction in Ireland left gaps in our woodland, parkland and hedgerow landscape, that in many instances were filled by ash.

However, ash dieback, caused by the fungal pathogen *Hymenoscyphus fraxineus* left Ireland in no doubt about our vulnerability to non-native diseases. Since it was detected in 2012, it has spread to every county in Ireland. The cultural, heritage and sporting significance of ash cannot be overestimated. Its rootedness in Irish culture goes back to when it was revered as a *bile* or sacred tree to its emergence as Class 1 in the Old Irish tree list alongside the other nobles of the wood (*airgi fedo*).

It is the only species suitable for hurley making but it is also an ideal timber for furniture, turnery and other high added value end uses. Ash is particularly suited to farm woodlands because many farmers will have greater knowledge of ash than most other tree species, especially since the demise of the elm.

Approximately 12 million ash were planted – mainly by farmers – during the five years up to and including 2012 when ash dieback was detected. This amounts to 3,417 hectares or 8,440 acres of land. This was a major commitment by farmers to a species

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Approximately 12 million ash were planted – mainly by farmers – during the five years up to and including 2012
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that takes up to 70 years to mature. These farmers now have to cope not only with the psychological trauma that accompanies forest destruction but also loss of income. They now have to replace these dying trees and while some help is available through the Department of Agriculture, Food and the Marine ash reconstitution scheme, this will not cover the financial loss suffered by farmers who planted ash to increase the broadleaved forest resource, to enhance biodiversity and to provide an income for themselves and their children.

Ash dieback influenced our approach in organising this conference as well as the choice of speakers. Dr. Miguel Nemesio-Gorritz illustrates new findings in ash research which has been prioritised in the Teagasc research programme. Ash dieback features as one of the diseases - already here or threatening – in an overview by Dr. Richard O’Hanlon. Ash dieback is one of a number of issues addressed by Mechteld Schuller of the ITGA, who will outline how disease impacts on the forest and approaches required to minimise threats.

Tom McDonald, Inspector, Forest Health with the Forest Service discusses the Department’s policy of maintaining a healthy forest environment by ensuring good management, identifying risks and maintaining a sustained commitment to measures which prevent the entry and establishment of destructive forest pests and diseases in Ireland.

Brian Murphy, discusses threats to Irish forests from the sawmiller’s perspective. He saw at first hand the impact of larch sudden death, when the three larch species were infected by *Phytophthora ramorum*. While the threat to European, Japanese and hybrid larch caused nowhere near the same public attention as ash, larch holds a special place in Irish forestry. European larch has been in Ireland since 1745 and has been the favourite timber for boat building, exterior panelling, transmission poles and long lasting fencing material. Brian Murphy describes how a cohesive approach by foresters, forest owners and his sawmill ensured that the spread of this disease could be minimised when infected trees had to be harvested.

While disease knows no boundaries, neither does it differentiate between native, naturalised or exotic species as Dr. Melanie Tuffen points out in her presentation on pest risk analysis in protecting commercial forests including Sitka spruce.

The plight of elm, ash and larch is desperate right now but nature is resilient. The dramatic decline of elm first took place 5,000 years ago. It may have been attacked by a similar agent as Dutch elm disease. Farm clearances may have assisted the decline of elm and climate change may also have contributed. But it made its way back only to be virtually wiped out again in the 1970s and yet there are signs however tenuous that it might be making a comeback.

Regardless of how hard they are hit, trees do recover. Japanese larch is one of our exotic forest trees now threatened by *P. ramorum*. It was introduced from Honshu Island, Japan where the most miraculous recovery of trees ever seen occurred after the US detonated an atomic bomb over Hiroshima on 6 August 1945, Dr. Harold Jacobsen, a scientist from the Manhattan Project, told the Washington Post that Hiroshima "will be barren of life and nothing will grow for 75 years" Yet, in the spring of 1946, new shoots emerged all over the city and today these are known as the survivor trees. It is symbolic that this conference not only marks IYPH but also the 75th anniversary of this cataclysmic event.



This eucalyptus survived the atomic bombing of Hiroshima even though it is located only 740 metres from the bomb hypocentre.



The destructive eight-toothed spruce bark beetle (*Ips typographus*) is now present in southern England.

Over the years, 170 of these trees – located within 2km of ground zero – have been nurtured by experts and volunteers alike. Each tree is identified as a *Hibakujumoku* – survivor tree. These trees demonstrate the resilience of nature against all the odds. We should take this as a sign that despite damage, we can restore forests, but nature needs a helping hand. Our researchers need funding to create vibrant strains to withstand disease. We must ensure viable plant health regulations are implemented in Ireland and the rest of the EU under the EU Plant Health Directive (Council Directive 2000/29/EC) even though globalisation, climate change and trade between countries of plant material and wood products increase the risk of introducing diseases.

We now know that insects can be introduced in plants, logs, sawn timbers, packaging and ship’s dunnage. In this environment, Irish forests face the threat of damaging insects such as the great spruce bark beetle (*Dendroctonus micans*), which is present in the UK. Our island location is a help in reducing this risk but it didn’t save Britain while the destructive eight-toothed spruce bark beetle (*Ips typographus*) is also present in southern England. This beetle causes catastrophic damage to forests in Central Europe and remains a constant threat to Irish forests and the timber processing industry.

Ireland has invested heavily in forestry over the past century and now has a valuable forest industry but there are many biotic and abiotic threats to our forests. It is vital that we remain vigilant to ensure that this multifunctional forest resource is protected and nurtured.



Seán Finan
Chief Executive
IrBEA

Seán Finan is a Chartered Engineer with a Bachelor of Civil Engineering from NUI Galway. He also holds a Certificate in Agriculture and farms part time. Prior to joining IrBEA, he had over 12 years engineering and management experience with John Sisk & Son (Holding) Ltd and took a two-year secondment from Sisk between 2015 and 2017 to complete a successful term as the 35th National President of Macra na Feirme – the young farmers’ representative organisation. He is developing IrBEA in playing a key strategic role in representing the bioenergy sector on the island of Ireland in meeting challenges such as climate change, emissions reduction and the provision of more renewable energy sources.

IRISH BIOENERGY ASSOCIATION DELIGHTED TO FACILITATE THE FORESTRY CONFERENCE

Healthy forests are very important to maximise the biomass available as a source of renewable energy.

The Irish Bioenergy Association (IrBEA) would like to congratulate the Society of Irish Foresters and the Wood Marketing Federation on a successful conference. We were delighted to work with Donal Magner and Pat O'Sullivan to facilitate a well attended conference. I would like to acknowledge the work of Teresa O'Brien, IrBEA Communication Manager, who worked tirelessly behind the scenes to ensure this event ran successfully.

IrBEA, and its members are very keen to see the further development of the Irish forestry sector. Healthy forests are very important to maximise the biomass available as a source of renewable energy. The highest value use of timber is as a material for use in sawn timber, panel boards or other uses. However, there are significant by-products including pulpwood, brash, bark, wood chip and sawdust. Substantial amounts of this material finds its way into the energy market. The supply of material for fuel will increase alongside forest harvesting over the coming decades.

The Wood Fuel Quality Assurance (WFQA) is administered and managed by IrBEA. WFQA certifies wood fuel (firewood, woodchip and woodpellet) suppliers to the ISO 17225 standard. The standard ensures quality wood fuels are placed on the market. Biomass as a fuel is one of the best alternatives to fossil fuels when it comes to reducing carbon, providing energy on demand, and providing stimulus to the local economy.

Biomass fuels can readily meet domestic, commercial and industrial energy demands. The Support Scheme for Renewable Heat (SSRH), offers clear incentives for commercial and industrial operations to switch to biomass heating.

The work of IrBEA is spread across the main bioenergy sectors of biomass, biogas, biofuels, biochar, energy crops and wood fuels. On the biomass side, the association is currently lobbying for the introduction of regulations to reduce the volumes of wet wood fuels on the market which are causing issues in terms of particulate emissions. We are also working closely with SEAI and other stakeholders to address issues regarding the implementation of the SSRH

Further information is available on our website www.irbea.org

Threats to Ireland’s Forests





Dr Richard O’Hanlon
Principal Plant Pathologist in Grassland and Plant Science Branch, Agri-Food and Biosciences Institute (AFBI), Belfast.

Richard works as plant pathologist with AFBI, delivering statutory testing and research on plant pathogens of Northern Irish trees and crops. He is particularly interested in fungi and oomycetes (incl. *Phytophthora*) and their interactions with trees.

ACTUAL AND POTENTIAL THREATS TO FORESTS THROUGHOUT IRELAND

Abstract
The island of Ireland has many advantages in terms of protection from non-native pests and pathogens of plants. However, tree health is under an ever increasing threat from these pests (including pathogens) in recent years, in part due to increased globalisation and climate change. The Irish forest estate was relatively free from serious diseases caused by pests during the 20th century. However, recent examples of outbreaks of non-native Dutch elm disease, sudden larch death, and ash dieback will all be familiar to foresters. In fact, recent research indicates that there are over 390 pests of trees and woody plants in Ireland and Northern Ireland, with more than 40 of these being suspected introductions.

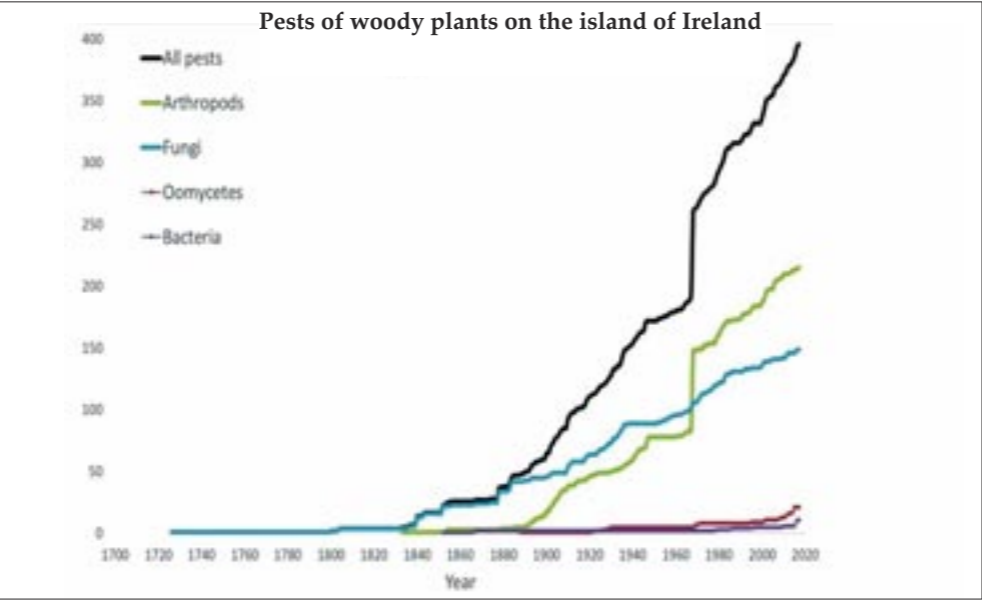
Detection of microbial pests of trees and plants, such as fungi and bacteria, is hampered by the fact that these pests can be present without causing any obvious symptoms. As well as these new non-native pest introductions, the well-known threats to forestry, such as green spruce aphid and annosus root rot, continue to cause issues for forest health locally.

There are a number of key challenges in preventing new disease outbreaks, including:

- dealing with unknown pests;
- legislating for new pests;
- early detection of new pests, and
- examining pests and their interaction with climate.

A number of these issues will be discussed, and options identified to protect forest and tree health from future outbreaks.

Some positive developments have recently occurred in terms of global horizon scanning initiatives and technological advances. These developments, if combined with efforts to increase forest resilience, can act to safeguard forests on the island of Ireland from future disease epidemics.



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Comments on Dr Richard O’Hanlon's presentation: *Actual and potential threats to forests throughout Ireland.*

Dr. O'Hanlon introduced his paper by referring to the irony of the conference subject matter coinciding with the Covid threat with its accompanying terminology such as 'testing, tracking, surveillance', now familiar to us all.

Tree health has been under threat from non native pests and pathogens for some time now, for example - Dutch elm disease, returning after many centuries to virtually wipe out the species. Sudden Larch Death, *Phytophthora ramorum* and ash dieback, *Hymenoscyphus fraxineus* which are recent entrants causing severe damage to infected forests. These are the most familiar to us but the speaker also referred to a long list of pests and pathogens representing some 390 diseases of which over 40 were introduced.

With regard to the more recent and more dangerous pests, detection is hampered by lack of symptoms and knowledge about the organisms, and by their manoeuvrability through human action e.g. disease carried on footwear. Dr. O'Hanlon outlined the main challenges facing the sector in combating disease and also some positive developments. The challenges include globalisation, dealing with unknown pests and legislation for new pests as well as early detection and understanding the relationship of pests with climate change.

The positive developments are:

- Ireland’s island status renders controls easier
- Tracking the delay factor between evidence of presence in the UK and in Ireland (c 9-10 years)
- Global Horizon Scanning
- Advances in science and technology
- Advances in Surveillance including Citizen Science

He gave some examples to illustrate these points. Citizen Science recently detected a case of the oak processionary moth in this country. The spruce giant bark beetle, *Dendroctenous micans* had first appeared in the UK in the early '80s and in Ireland in 1989. Pathogens and pests have been tracked moving north in European countries almost certainly due to climate change. Our island status has prevented the two very dangerous bark beetles, *Ips typographus* and *Dendroctenous micans* from becoming established here up to the present. In conclusion Dr. O'Hanlon recommended some basic steps in implementing plant protection

- Source plant material with care
- Keep forest operations clean
- Commence planting for the future and climate change
- Formulate and implement plant health policies
- Promote an understanding of diseases and the dangers they pose
- Keep monitoring symptoms and identifying pests and pathogens
- Apply Regulations

Dr. Gerhardt Gallagher
Forestry consultant



Tom McDonald,
*Inspector, Forest Health, Forest Service.
Department of Agriculture, Food and the
Marine*

Tom McDonald is a Forest Health Inspector within the Forestry Inspectorate of the Department of Agriculture, Food and the Marine. The Forest Health section of the Forestry Inspectorate has a wide range of forest health responsibilities which include policy and legislative formulation and operational implementation; forest health surveys; import controls and export certification and oversight of national production of ISPM 15 compliant Wood Packaging Material.



Awareness communication and stakeholder involvement are vital aspects of any plant health programme.

Left: Japanese larch is now vulnerable to infection by the pathogen Phytophthora ramorum.

SAFEGUARDING THE FOREST

Abstract

The island of Ireland is regarded as a single epidemiological unit for plant and forest health purposes. Overall forest health on the island is relatively good and our forests are free from a range of harmful forest pests and diseases that are endemic and very damaging on the Continent and further afield. However, it is widely accepted that the threat of introduction and potential impact of harmful forest pests and diseases is on the increase due to globalisation, increased trade and the impacts of climate change.

The Department of Agriculture, Food and the Marine fulfils the role of Ireland’s National Plant Protection Organisation (NPPO), implementing Ireland’s plant health programme with the aim of protecting the health of plants, trees, forests and ecosystems. This programme is described in the *Plant Health and Biosecurity Strategy 2020-2025* and further defined and organised through the implementation of EU and national legislation.

The Forestry Inspectorate implements the forestry aspects of the *Plant Health and Biosecurity Strategy* and legislative requirements in close partnership with other Divisions of the Department including Horticulture and Plant Health Division and the Plant Health Laboratory.

This work ranges from representing Ireland’s interests at relevant fora within the EU and elsewhere in the development of policy and legislation and in the implementation of related trade and operational requirements for forest health. It includes horizon scanning and risk assessment for the emergence of potential new threats to our forests and extensive annual and multiannual national forest health surveys for a range of harmful organisms.

The Department conducts import controls for a range of controlled wood and wood products including Wood Packaging Material (WPM) to prevent the potential import of harmful organisms. It also oversees the national production of ISPM 15 compliant WPM to facilitate Irish exports and has been working closely with the sector on the new plant health requirements for traders with the UK following its departure from the EU at the end of the transition period.

Awareness communication and stakeholder involvement are vital aspects of any plant health programme. The Department’s new Strategy document, the new Plant Health Legislation and the designation of 2020 as International Year for Plant Health all highlight the key role that stakeholders play in safeguarding forest health and provide opportunities for greater promotion, enhanced awareness and involvement in protecting our forest health.

Comments on Tom McDonald's presentation: *Safeguarding the forest.*

Tom McDonald's presentation dovetailed quite neatly with the previous speaker, Dr Richard O'Hanlon. His presentation highlighted:

- Forest health in Ireland – status, pressures and threats
- Policy and legislative position and response
- The forest health programme
- Stakeholder involvement
- Brexit and forest health

While the health status of Ireland's forests remains good overall, in recent years infections by pathogens such as *Phytophthora ramorum*, *Hymenoscyphus fraxineus* and the recent discovery of the oak processionary moth underlines the potential risk of the arrival of other pests such as the European bark beetle. The level of threats has been increased significantly by factors such as climate change, global trade patterns, international travel and population movements.

The policy response is through DAFM's role as the National Plant Protection Organisation. It is responsible for the implementation of the *Plant Health and Biosecurity Strategy 2020-2025*. This strategy is based on principles of preparedness, capacity and awareness.

The forest health programme includes import controls, inspections at points of entry and annual forest health surveys. The speaker described the tree check app (www.treecheck.net) which is the basis of a stakeholder initiative to report poor health in trees and forests.

Conscious of recent timber imports from Germany and the Benelux countries, Tom McDonald said the Department conducts import controls for a range of controlled wood and wood products including Wood Packaging Material (WPM) to reduce the risk of importing harmful organisms.

Regarding Brexit he said: "The Department also oversees the national production of ISPM 15 compliant WPM to facilitate Irish exports and has been working closely with the sector on the new plant health requirements for traders with the UK, following its departure from the EU at the end of the transition period."

Pacelli Breathnach
CPD Administrator
Society of Irish Foresters

Threats to the Forestry and Forest Products Sector



National Forestry Conference 2020
SESSION 2



Brian Murphy
Chief Executive
Balcas Limited

Chairperson
Forest Industries Ireland (FII).

Brian Murphy was appointed chairperson of FII in 2019, the forestry business sector within Ibec. FII represents 22 companies representing the full span of the forestry supply chain from the nursery and growing sector to wood processing and energy.

AS THE SAWMILLER SEES IT

We are all in the gutter, but some of us are looking at the stars.

– Oscar Wilde

I am approaching my presentation from the perspective of Forest Industries Ireland, which is an honour to chair, and my day job as CEO of Balcas Ltd, the sawmill and renewable energy producer, headquartered near Enniskillen, Co. Fermanagh.

In opening the session “Threats to the Forestry and Forest Products Sector” I am specifically addressing the topic “As the sawmiller sees it”

I am conscious of the context of pests and disease. Maybe there are some who see the sawmiller as a destructive pest or maybe even as a disease, but we are not. We are part of the chain of value that enables forestry to provide enormous benefits to the citizens of this island.

My experience of pests and disease is one of dealing with the consequences. For example, we were able to assist the NI Forest Service with the consequences of *Phytophthora ramorum*, the disease that attacks larch species. Disease infested larch was identified, felled and segregated.

The logs were transported on pre-approved road corridors to our factory in Enniskillen where they were isolated in a quarantine area on our site. Every trailer was cleaned down in the quarantine area before returning to the road. Specific sawmill shifts were set up to deal only with disease impacted logs. The logs were debarked and processed. All of the co-product was gathered – the whole mill including debarking areas were thoroughly cleaned down with compressed air/brushes etc and 100% of the co-products were turned into electricity and heat in the woodchip plant. The timber was fine. I was very proud of the co-ordination and teamwork from NI Forest Service and Balcas. It was all done within our normal pricing mechanism which minimised losses, though both parties incurred extra cost in managing and monitoring.

So in preparation for today – and a little demoralised by the current sectoral difficulties with licencing and the consequent dearth of logs – I was thinking about what to say. After a few blind alleys, I dismissed the clouds and thought I would try to contextualise what I see as “threats” or perhaps the “greatest threat” within a framework of positivity.

Let me give you first an executive summary. Forestry is a great endeavour. Foresters are a great bunch of people. Together we have to “get out there” and shout from the rooftops about the good this industry can bring.

As part of my few words I will refer to our own business, but please understand that it not as any advert or boast. It is only by way of helping me explain what this industry, and all of you on this webinar enable.

I expect no one is surprised by my opining that our daily news is filled with:

“demoralisation”; “problems”; “threats to life”; “Brexit”; “Trump”; and “other general downers”. As well as all this abundance of gloom, our forest sector is mired in an existential crisis. It has been so for over a year and a half with the threat of the “licencing appeals fiasco”.

That is the end of grey and dull “here and nowness” from me.

I passionately believe that all of you in the Irish forestry industry, that are listening today; and all of the many generations of your predecessors from the past 100 years; and all of the many colours of government ministers, departments, and civil servants over the recent century; and our farmers and our landowners; and finally our island itself; have collectively presented us, in 2020, with a majestic opportunity to contribute positively to the wellness of today’s society.

It is also a golden opportunity to continue to contribute towards employment and retention of people in our rural communities. It is also a real opportunity to contribute new ways of earning for our farmers; and we have the chance to contribute massively towards our island’s tackling of the climate crisis. Lastly, despite the naysayers all of our trees contribute to the beauty and biodiversity of this island of ours.

So, it appears to me, as a representative of sawmillers, that the biggest threat to the forestry and forest products sector is that we get enveloped in the immediate moment and we forget that forests and trees are beautiful things that we are working to restore, grow and expand. These efforts can’t be fulfilled instantly in the “here and now”. In Ireland it takes half a lifetime of grow a rotation, and a whole lifetime of effort when you love it. And why do we love it? Because we get fulfilment by knowing that our actions will yield more benefits for the next generation.

So for me, what is the “threat? It is the threat where we are failing to communicate our great story.

As I said earlier, this next bit is not by way of advertisement or boast. Please believe me when I say that there are many challenges and loads of room for betterment. Briefly, Balcas is:

- A business of generations – founded the same year as me ’62 – and there are several examples of third generation of the same family being employees.
- An ISO 45001 certified company which places a premium on occupational health and safety including the protection and promotion of physical and mental health. Balcas is accredited in the first wave of companies on these islands. In these times, mental health, positivity, and smiles require 70 minute hours; 25 hour days; and 8 day weeks. We have 25 trained mental health first aiders in the business and believe me when I say they are using their training during these Covid-19 days.
- A processor of 1million tonnes of commercial trees annually. All of this – and more – is being regrown under best sustainable management practice.
- A sawmill and energy producer that uses the whole tree.

There are some other production numbers and spending numbers on the slide which I won’t talk through. The big question is "So what?" What has that got to do with threats to the forestry and forest products sector.

Climate change is here. Our industry and sector are making a great contribution, one that we should all be proud to be part of. As I see it we should unapologetically

promote the good that every person at this webinar does by telling our collective story. We should also of course recognise the contrarian views of those fellow citizens who feel they are impacted adversely by forestry activity. We should learn from historic mistakes made whilst trying to educate others and being confident in our own actions. The message is:

- The world needs wood – 3.4 billion m³ each year and growing. New plantation forests are essential.
- Utilising well managed plantations reduces the pressure on natural old growth forests (helping preserve vital reserves of biodiversity).
- In the words of David Attenborough “Wood is an extraordinary renewable resource and taking it from well managed forests benefits forests and the planet, but on their own natural forests can’t supply all the wood we need. So we have to farm trees, and create a new generation of plantations”.
- Local timber is best.

I draw attention to one section of one bullet which says "Your forests, our little business alone, can say it caused three super tankers or six million barrels of oil not to be used in these islands.

I began by saying that I was done with “grey and dull here and nowness”. I would urge everyone listening to address the threat to this industry and our forests – as this sawmiller sees it – by telling everyone you meet – how great your industry is and actually that you are contributing to saving the world.

Together we need to continue to develop a strong industry – which must include the ingredient of value and wealth creation. This will give us the wherewithal and motivations to protect our forests. We heard from Minister Hackett as she opened our conference about her optimism. Let's show the Minister that she is right.

The children in the photo are playing on a tonne of CO₂ captured by the forests in Ireland!



Comments on Brian Murphy's presentation: As the sawmiller sees it.

Brian Murphy's final image in his presentation featured a group of school children playing on sawn solid timber. The caption read: "The children in the photo are playing on a tonne of CO₂ captured by the forests in Ireland!". The message is that this timber will continue to store carbon for the duration of its life while the forests where it was harvested are continuing to sequester carbon dioxide. Illustrating carbon sequestration in this manner brings home the reality – and solidity – of climate change.

The continuous conversion of our most dangerous green house gas into wood is only assured if our forests remain healthy. He acknowledges that disease can interrupt this chain and the sawmiller in particular is extremely conscious of this threat. The sawmiller's experience of pests and disease he says "is one of dealing with the consequences". This was brought home to Balcas when the company was able to assist the NI Forest Service with the consequences of *Phytophthora ramorum*. This involved the identification of disease infested larch and followed by specialist harvesting. Then logs had to be segregated and transported on pre-approved road corridors to the Balcas sawmill in Enniskillen where they were isolated in a quarantine area before processing.

As he outlined the debarking and processing operation, the cleansing of lorries and debarkers, thoughts of the cost and time involved in this operation must surely have crossed the minds of the 273 attendees at the webinar conference. And yet this is minor compared with the problems faced if the eight-toothed spruce bark beetle (*Ips typographus*) was introduced to Ireland. This devastating insect pest in Central European forests requires harvesting within a year of its outbreak to salvage timber and to minimise further damage. These salvaged logs have to be debarked and in serious beetle outbreaks, natural and man-made buffer zones need to be created to separate different forest stands.

Brian Murphy outlined his awareness of threats to Irish forests but he broadens the health theme to discuss the positive contribution Balcas and the forestry industry are making to the mental and physical wellbeing of people working in the industry and the benefits of our forests to public wellbeing.

In a positive presentation, he discussed the importance of the forest as a sustainable industry in climate change mitigation. The world needs 3.4 billion m³ of wood of wood annually and he believes that healthy new plantation forests are essential in fulfilling this requirement or as David Attenborough says: "Natural forests can't supply all the wood we need. So we have to farm trees, and create a new generation of plantations."

This approach takes the pressure off the natural forests so the children playing around the tonne of carbon dioxide can also play around the protected trees in our ancient woodlands.

Donal Magner
Forestry Editor
Irish Farmers Journal



Mechteld Schuller
Executive Secretary
Irish Timber Growers Association

Director
Commercial Forestry Services

Mechteld Schuller M.Sc. (For) - Agricultural University Wageningen, The Netherlands. Mechteld also holds certificates in Forest Management Certification and Auditing to ISO 19011 from the Soil Association, is Director and Project Manager at CFS and Executive Secretary of the ITGA.

Pest management

The risks and implementation of pest mitigation measures are set out in detail in Integrated Pest Management Strategy (IPMS) and Environmental and Social Risk Assessments (ESRAs). The development of such detailed documentation is time and resource consuming and subject to regular updates but can assist the sector in pest management and best practice strategies. There is now a growing interest in the potential for a national co-ordinated response to assist foresters and owner groups in achieving these aims through certification.

AS THE GROWER SEES IT

Abstract
The introduction of DAFM'S Plant Health and Biosecurity Strategy 2020 – 2025 was welcomed by ITGA last year including its Key Strategic Principles: Risk Anticipation, Surveillance and Awareness. This strategy requires a detailed implementation plan with key performance indicators so that it can be regularly assessed and evaluated.

Implementation of forest policy and the Plant Health and Biosecurity Strategy should be based on a clear vision and a well thought out plan. ITGA has called for such an Implementation Plan and also an Emergency Response Plan to immediately respond to any newly discovered pests and diseases.

These should be communicated to industry on an ongoing basis. Clear guidance on biosecurity for those working in forestry should also be developed by the sector to minimise the risk of introducing or spreading pests and diseases. An emphasis on employing systems for early detection and dedicated forest pathologists / entomologists to improve detection and response to such pests and diseases should be prioritised.

The ITGA Newsletter reported as early as 2010 on the potential risk of Oak Processionary Moth, which was detected here in 2020. *Ips typographus* is having a devastating effect on the European forest estate and there is real concern in the sector about it spreading here. Ash dieback has taught us that controlling and eradicating pests and diseases can be extremely costly and, despite best efforts, it is not always successful.

Climate change also exacerbates the problem of pests and diseases, as fluctuations in temperatures, rainfall and extreme weather events can directly and indirectly affect the impact of pests.

Assessing the risk of pests and the way pests are controlled should be integrated into forest management planning, including the decision making process, to determine the methods and extent of pest control. As part of the European Green Deal there will be a requirement to reduce the use of pesticides by 50%. Systems such as those employed in forest certification could assist in addressing this requirement. Certification also aims to reduce, and ultimately eliminate, the use of chemicals.

As there are no entirely harmless pesticides or herbicides, risk mitigation is key, which is also recognised in the documentary requirements for certification, which requires justification and recording of pesticide use as well as identifying risks and mitigation measures.

The risks and implementation of pest mitigation measures are set out in detail in Integrated Pest Management Strategy (IPMS) and Environmental and Social Risk Assessments (ESRAs). The development of such detailed documentation is time and resource consuming and subject to regular updates but can assist the sector in pest management and best practice strategies. There is now a growing interest in the potential for a national co-ordinated response to assist foresters and owner groups in achieving these aims through certification.

Comments on Mechteld Schuller's presentation: *As the grower sees it.*

Over the past decade several research projects have been undertaken with funding support from COFORD on alternative methods of pest management, in particular the control of the large pine weevil, which can cause substantial plant mortality on replanted sites. Disseminating research results to the sector, and in particular translating these results into practical applications, is therefore of great importance in ensuring that our valuable woodland resource is protected for future generations.

Mechteld Schuller outlined plant health concerns from a tree growers perspective and highlighted the importance of the recent Department of Agriculture, Food and the Marine document *Plant Health and Biosecurity Strategy 2020-2025*. She placed particular emphasis on its three strategic principles:

- Preparedness – knowing what’s out there.
- Risk surveillance – requiring an appropriate and co-ordinated response.
- Risk awareness and communication – importance of sharing information.

She stressed the need for an implementation plan incorporating Key Performance Indicators which needs to be communicated regularly to the sector. As a grower, preventing pests from entering Ireland is paramount and should be prioritised rather than having to deal with the consequences of an outbreak. As has happened in the past, pests that are in the UK will most likely arrive in Ireland in a number of years and a plan should be in place now to deal with this.

Forest plant health policy should prioritise prevention and early detection of pests and our island status should make this easier. There are methods being employed in other countries to facilitate early detection, such as the use of sniffer dogs in Sweden. Climate change cannot be ignored and is exacerbating the risk of new pests and diseases arriving on our shores due to rising temperatures, an increase in the number of extreme weather events and increased incidence of drought. These measures combined facilitate the expansion of pests into new territories. Furthermore, these factors will stress normal tree health. Pests and diseases impact on the entire forest ecosystem, they alter the balance of ecology in the forest, affect carbon storage capacity, affect timber supply, local and regional economies, employment and recreational values.

In conclusion, she emphasised that prevention and early detection is critical, rather than the costly measures associated with trying to control and eradicate any pest or disease. For pests and diseases which pose a real risk, an emergency response plan is essential, but this must be communicated widely. Ongoing research which can be translated into practical solutions and biosecurity guidelines should be communicated and be accessible to all.

Marina Conway
Chief Executive
Western Forestry Co-operative



Protection, Treatment and Discussion



National Forestry Conference 2020
SESSION 3



Dr. Miguel Nemesio-Gorriz
Research Officer, Teagasc

Dr. Miguel Nemesio-Gorriz completed his PhD in biology in the Swedish University of Agricultural Sciences in 2016. He received a Masters in Plant Genetics and Breeding in the Polytechnic University of Valencia, Spain, in 2011 while he received his primary degree in pharmacy in the University of Valencia, Spain. Miguel is a Research Officer with Teagasc where he is working on identification and propagation of *Fraxinus excelsior* genotypes which are tolerant to ash dieback disease.



Infection of ash trees by the pathogen causing ash dieback occurs through the leaves and progresses into the tree causing more severe symptoms like shoot dieback and stem lesions (above).

NEW FINDINGS IN ASH RESEARCH

Ireland has 25,000 ha of ash plantations and 282,000 ha of hedgerows where ash is a major component. In recent years, ash trees have suffered a rapid decline due to the effect of ash dieback. Ash is one of the forest species prioritised at Teagasc in the context of research. A breeding program for tolerance to ash dieback has commenced and several key research lines are being pursued, including the development of markers for tolerance to ash dieback, the study of alternative infection pathways for the pathogen causing ash dieback, adaptation of native ash to current climate and silvicultural alternatives to mitigate the impact of ash dieback.

- The project began in 2017 with the aim of identifying ash genotypes tolerant to ash dieback in order to build a collection. By 2019, 208 genotypes had been collected in collaboration with seven European institutions. In 2020, copies of these genotypes were planted together to form a seed orchard in Castlemorris, Co. Kilkenny. Disease prevalence in the seed orchard will be monitored and seed will be collected for progeny testing. As tolerance to ash dieback is an inheritable trait, 40% of the offspring is expected to be tolerant to ash dieback based on previous knowledge.
- Tolerance to ash dieback is a relatively common trait in ash populations. Between 1% and 3% of ash trees in any ash population are highly tolerant to ash dieback. Despite this, it is not clear what makes an ash tree tolerant to ash dieback. Genetic markers have been predicted and infrared spectroscopy has been used to differentiate susceptible and tolerant ash genotypes. In collaboration with the Max Planck Institute in Germany, Teagasc has identified 64 biochemical markers associated with ash dieback, 39 of which showed higher levels of tolerance. Two of these markers inhibited the growth of the pathogen that causes ash dieback in the laboratory.
- Infection of ash trees by the pathogen causing ash dieback occurs through the leaves and progresses into the tree causing more severe symptoms like shoot dieback and stem lesions. At an advanced stage of ash dieback, ash trees start to show collar infections and bark infections that do not start in the leaves. Teagasc research has shown that lenticels, which are small packs of porous tissue that allow the tree to breathe through the bark, are used by the ash dieback pathogen as an entry point.
- Ash trees are native to Ireland, they have adapted to Irish climate and conditions through generations and this allows them to grow and dominate the landscape. Climate has been changing rapidly due to human activity. As a result, some native species may not be adapted anymore to their native environments as climate has changed at a faster rate than their generation times. Teagasc has started a study where 40-50 European ash provenances were evaluated based on their growth over a period of 15 years. Results show that ash provenances originating at a latitude approximately three degrees lower than the site performed best in terms of growth. These results should be taken into consideration when planning future forest genetic resources and breeding work.

Comments on Dr Miguel Nemesio-Gorriz's presentation: *New findings in ash research.*

Miguel Nemesio-Gorriz outlined the history of how ash dieback disease evolved and how the fungi are specialists and natural decomposers of ash leaves in soil in their native environments. *Hymenoscyphus fraxineus* originated in eastern Asia and Miguel outlined how it evolved with the native European *H. albidus* into the deadly pathogen of ash. This process which was described by Miguel as "Invasive pathogen" meets naïve host is also important in understanding how other pathogens may spread.

Research and related modelling work shows that within two decades mortality due to the spread of ash dieback reaches 60%. Most ash trees die, but the remaining 40% will experience different levels of infection and Miguel outlined that one out of five ash trees will survive in the longer term. This has important implications for how we can address this disease.

The question of what makes some ash more tolerant of the disease is critical and it is found that two chemicals, *fraxetin* and *esculetin*, are highly abundant in tolerate ash and inhibit the growth of *H. fraxineus*.

In the main, *H. fraxineus* infects ash trees through the leaves and progresses into the tree. However, an important point made was that stem and collar infections on healthy trees have been reported under conditions of high humidity and high disease pressure. These infections can cause healthy trees to collapse with major health and safety implications. This is of major significance and in Q & A afterwards the point was made that in order to get timber growers to remove infected ash and ensure public safety, adequate grants must be made available that cover the cost of these operations and safe removal of ash including the reconstitution of the plantation in question.

An important question was posed: Is Irish ash well adapted to Ireland? The provenance of ash is important in relation to adaptation and tolerance to disease. We must look for provenances from optimal latitudes for optimal adaptation and tolerance.

This was an important and enlightening presentation and one of Miguel's final points was well made in that breeding for resistance to ash dieback offers a chance for a new start with "optimally adapted material".

Our ash are of major national importance to Ireland and Miguel's and Teagasc's significant work have important take home points such as not all ash will die – 20% of our ash are expected to survive – so we must now look to the future for a new start with "optimally adapted material".

Donal Whelan
Technical Director
Irish Timber Growers Association



Dr. Melanie Tuffen
Postdoctoral Researcher and Plant Health
Science Advisor, Department for Envi-
ronment, Food and Rural Affairs, UK

Dr. Melanie Tuffen is an experienced pest risk analyst and has worked in both the UK and Ireland. She currently works for the Department for Environment, Food and Rural Affairs managing research projects related to pest risk analysis.

Pest Risk Analysis (PRA)

PRA can be carried out on both pests and pathways. In pest-focused PRA, the risk of entry, establishment, spread and potential impacts of a specific pest is analysed, and if the risk is unacceptable then risk mitigation measures are identified. As a part of the DAFM funded FORM project (FORest Management), the first rapid PRA scheme for Ireland has been developed.

PEST RISK ANALYSIS IN PROTECTING COMMERCIAL FORESTS

Abstract

Non-native pests and diseases of forest trees can have devastating impacts, as has been seen in Ireland with outbreaks of Ramorum dieback (*Phytophthora ramorum*) in larch and ash dieback (*Hymenoscyphus fraxineus*). Elsewhere in the world the emerald ash borer (*Agrilus planipennis*) has spread from its native range in the Far East to European Russia and North America, where it is having huge impacts on ash (*Fraxinus*) and Eucalyptus rust (*Puccinia psidii*) has spread to Eucalyptus growing regions of the world, with heavy infestations leading to defoliation, stunted growth and even death of trees. Yet the island of Ireland remains free of many of the most damaging pests and diseases of forestry which are present in Europe and globally. To ensure thriving forests in the future it is important to take action to keep this pest free status.

As an island, pests and diseases (collectively referred to as pests) have little opportunity to arrive via natural spread, and most introductions will occur in association with imported commodities such as plants, timber, wood packaging material and seeds. Phytosanitary measures are conditions that can be placed on the trade of such goods, such as requiring specific treatments like kiln drying, to help reduce the risk of pests being associated with a commodity. Under international trade laws, phytosanitary measures must be technically justified. Pest Risk Analysis (PRA) is the internationally accepted process for technically justifying phytosanitary measures. PRA is defined by the International Plant Protection Convention (IPPC) (the body recognized by the World Trade Organisation as the standard setting authority) as ‘The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the strength of any phytosanitary measures to be taken against it’.

Globalisation has led to dramatically increased movements of plants and plant products, and consequently an increase in the introduction of invasive plant pests, to new regions. The risks posed by trades in a specific commodity can be addressed via pathway-focused PRA. In the pathway PRA process, a list of pests that can be associated with the pathway or commodity is compiled and then subjected to risk analysis. Pathway-focused PRA has an advantage over pest-focused PRA in that by identifying measures for all known pests, it is likely that these measures may also help reduce the risk of unknown pest threats being associated with the commodity.

Protected Zones are a form of EU legislation that allows a member state to place additional phytosanitary measures on commodities to reduce the risk of entry of pests which are absent from the member state but present in the rest of the EU. Ireland has more Protected Zones than any other EU member state – including important forestry pests such as *Ips typographus* (European spruce bark beetle). Utilising PRAs can help identify additional forest pests that may pose a threat to commercial forestry in Ireland, especially as the climate warms and potentially becomes suitable for a wider range of species.

The future

Dr. Tuffen's presentation clearly demonstrates the usefulness and ongoing need for horizon scanning to identify high risk pests of Irish forestry. Pest risk analysis is an essential tool to help assess the potential risk that future pests can pose, identify suitable measures to exclude them and, where appropriate, provide the necessary evidence direct to the EU to support the regulation of such pests and pathways. As Dr. Tuffen concludes: ‘The island of Ireland remains free of some of the most damaging forest pests in Europe and PRA can help in the fight to keep it that way’.

Comments on Dr. Melanie Tuffen's presentation: *Pest risk analysis in protection commercial forests.*

Dr. Melanie Tuffen is well positioned to discuss the key role of pest risk analysis (PRA) in protecting our forest resource. She approached it from her position as plant health science advisor with the Department for Environment, Food and Rural Affairs in the UK but also drew on relevant work in Teagasc on the DAFM funded FORM project.

Horizon Scanning

Horizon scanning is the process by which pest risk analysts identify potential new threats. Areas of focus include new pest species, new locations as well as new potential hosts. New trade can also lead to the identification of new pest threats. During the horizon scanning process, it is important to include a range of sources such as scientific literature, trade journals, social media channels and interception records.

Pest Risk Analysis

In order to protect the country from the introduction of new pests, regulations exist around the importation of plants and plant products. International trade laws specify that such regulations must be “technically justified”. The internationally recognised way to justify such regulations is via the use of pest risk analysis (PRA). PRAs help identify measures that can be taken to reduce the risk of the pest via regulation. PRA may analyse the risk of an individual pest, or it can analyse the risk that trade in a particular commodity poses, analysing all pest risks associated with that commodity – also known as “pathway” PRA. PRA is an essential tool in identifying these pathways.

Case study - hemlock looper

Dr. Tuffen provided an example of the hemlock looper (*Lambdina fiscellaria*), a North American moth, the caterpillar of which is a forest pest that can cause extensive defoliation and mortality of coniferous trees. A PRA carried out for this species identified a previously unknown pathway of entry. This moth species tends to lay its eggs in the mosses and lichens that cover trees in the lush North American forests. It was discovered that such mosses and lichens are harvested directly from the forest and are being exported to the EU for use in ornamental displays. When this occurs, the eggs of the hemlock looper may be inadvertently gathered up with the mosses and introduced into new regions. The PRA for the hemlock looper has been sent to the European and Mediterranean Plant Protection Organisation (EPPO) for consideration.

Irish PRAs

The FORM (FORest Management) project fosters the development of capacity building in the areas of tree improvement and forest health research in Ireland. The project had a specific work package to address potential risks to Sitka spruce. An in-depth literature search was undertaken to identify pests of all species of the genus *Picea* globally. A range of known and potential pests of Sitka spruce was identified. The FORM project also resulted in the development of an appropriate PRA scheme and the production of the first Irish PRAs.

Tom Houlihan
Forestry Specialist
Teagasc

CONFERENCE ORGANISERS

The Society of Irish Foresters

The Society of Irish Foresters is an all-island organisation which was founded in September 1942. Its main aims are to spread knowledge of forestry and to improve professional standards in the Irish forestry industry. To that end the Society publishes an annual scientific journal, organises field days, public lectures, conferences, international study tours and produces policy position papers on forest policy, research and education. The Society is committed to sustainable development of the Irish forestry industry especially in the continued development of rural areas. We are dedicated to the provision of renewable resources, the protection of local and global environment, the integrity of global carbon and hydrological cycles and the conservation of biological diversity



Further information
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The Wood Marketing Federation

The Wood Marketing Federation (WMF) was founded in 1989 to promote wood and wood products providing they are sourced in sustainably managed forests. The WMF publishes educational and promotional material on wood design and usage as well as organising conferences and the biennial Wood Awards Ireland. This event promotes wood in sustainable construction and design. Organised by the WMF and supported by the Royal Institute of the Architects of Ireland (RIAI), the awards are open to registered architects, engineers, designers, woodworkers and students who incorporate wood as the inherent medium in submitted projects. WAI 2020 is also open to Irish practitioners based overseas. WAI is part funded by the Forest Sector Development Division, Department of Agriculture, Food and the Marine and Enterprise Ireland, while RIAI and the Society of Irish Foresters provide administration and promotional support.



Further information
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The Irish Bioenergy Association (webinar facilitator)

IrBEA was founded in May 1999 to promote the bioenergy industry and to develop this important sector on the island of Ireland. The organisation is a self-governing association of voluntary members. Membership includes farmers and foresters, fuel suppliers, energy development companies, equipment manufacturers and suppliers, engineers, financiers and tax advisers, legal firms, consultants, planners, research organisations, local authorities, education and advisory bodies – anyone with an interest in the bioenergy industry. IrBEA operates as a not-for-profit limited liability company. The association is funded from member contributions with other income established from services and consultancy. IrBEA organises conferences and other events as well as providing members with weekly e-bulletins, e-newsletters and social media alerts.



www.irbea.org

