

**SECOND INTERNATIONAL CONFERENCE ON
BIODIVERSITY IN FOREST ECOSYSTEMS AND LANDSCAPES**
UNIVERSITY COLLEGE CORK, IRELAND, 27-31 AUGUST 2012



CONFERENCE PROGRAMME

MONDAY, 27th AUGUST 2012

18:30 – 20:00 **Conference Opening & Registration**
Western Gateway Building, UCC

TUESDAY, 28th AUGUST 2012

08:30 – 09:00 **Registration**
Western Gateway Building, UCC

09:00 – 09.45 **Keynote address 1** Ireland does have forests!!! The importance of highly managed forest fragments in agricultural landscapes
John O'Halloran

Symposium 1: Aquatic biodiversity and forests

Conveners: Deanna H. Olson & Mel Warren

Forest-dependent biodiversity includes stream- and wetland-dwelling species that are highly associated with and adapted to forested ecosystems and their attributes wherever forests occur in the world. This biota can be affected, often adversely, not only by forest management practices but also by factors such as invasion of non-native species, or in the future, climate change. For example, timber harvest, invasive species, or climate change (e.g., extended drought) may alter aquatic habitat conditions such as water temperature, water quantity, substrate composition, or down wood availability which singly or in concert can cascade across multiple organizational levels of aquatic organisms. This Symposium will explore a broad context of forest aquatic biodiversity, ranging from descriptions of the diversity of species dependent on particular forest types to quantification and prediction of shifts in biodiversity as a result of contemporary or future factors affecting the world's forests and the waters that drain them. Presenters from around the world will be solicited to give papers on the aquatic biota in forested systems, describing the extent of diversity in forest aquatic systems, documenting linkages to forest attributes in the context of contemporary and future issues affecting forests, and sharing innovative approaches to their conservation.

09:45 – 09:50 Introduction

09:50 - 10:05 Robin Moore T1 Novel partnerships for amphibian conservation

10:05 – 10:20 Deanna H. Olson, Jeffrey Leirness, Patrick Cunningham and Ashley Steel T2 Riparian buffers and forest thinning: Effects on headwater vertebrates 10-years post-treatment

10:20 – 10:35 Rebecca Flitcroft and Kelly Burnett T3 How important are stream network relationships anyway? The example of juvenile coho salmon on the mid-Oregon coast

10:35 – 10:50 Melvin Warren and Ken Sterling T4 Effects of small instream wood on fish diversity, evenness, dominance, and assemblage composition and structure in a sand-bed stream of the Gulf Coastal Plain, USA

10:50 – 11:05	Jenna Piriou	T5 Wetlands biodiversity and management in forests in western France
11:05 – 11:20	Conor Graham, Tom Drinan, Simon Harrison and John O'Halloran	T6 Effect of plantation forestry on brown trout communities in Irish peatland lakes

11:20 – 11:40 *Tea Break*

Symposium 2: Challenges and opportunities for maintaining biodiversity in forested landscapes in the context of climate change and the cumulative effects of anthropogenic and natural disturbances

Conveners: Walk Klenner & Doug Lewis

In this symposium we explore landscape-level approaches to evaluating and managing the effects of current and future stressors on biodiversity in forested ecosystems. Concerns about the ongoing loss of forest habitat to urban development and agriculture, habitat fragmentation, and the conversion of complex old natural forests to early seral managed stands and exotic species plantations are well documented. In a 21st century of expanding human influence on forested ecosystems, coupled with the projected effects of climate change on the distribution of forests, the need for modelling approaches to anticipate change, and mitigation practices to diminish the impact of these stressors on forest biodiversity has never been more urgent. Traditional consumptive uses of forest resources (e.g. timber harvesting) are expanding with increasing interest globally in biofuels and biomaterials. In addition, non-consumptive uses such as wind power installations have the potential to perforate and fragment forests with roads and early seral habitats. In this symposium we explore the tools and modelling approaches that can help predict future conditions, identify the likely impacts these changes will have on forest biodiversity individually or as spatial and temporal cumulative effects, and explore options for future desired conditions and management planning that can help diminish biodiversity loss.

11:40 – 11:45	Introduction	
11:45 – 12:00	Walt Klenner, Russ Walton and Doug Lewis	T7 Managing landscapes in southeast British Columbia for forest biodiversity in the context of multiple objectives management and climate change
12:00 – 12:15	Bevan Ernst	T10 Assessing landscape connectivity for forestry management
12:15 – 12:30	Che Elkin, Simon Briner, Robert Huber and Harald Bugmann	T9 Evaluating the relative impact of adaptive forest management and land use changes on mountain forest biodiversity under climate change
12:30 – 12:45	Deanna H. Olson and Kelly M. Burnett	T10 Aquatic-terrestrial connectivity designs in forests: Funnels and chains across landscapes
12:45 – 13:00	Deniz Özü, Uğur Zeydanlı, Ayşe Turak, Mehmet Demirci and Mehmet Demir	T11 Integration of forest biodiversity conservation into forest management in Turkey

13:00 – 14:00 *Lunch Break*

14:00 – 14:15	Liz L. Deakin, Gary M. Barker, Louis Schipper, Jason M. Tylianakis and Raphael K. Didham	T12 Glitches in the matrix: To what extent does increased productivity in agricultural systems lead to ecological impacts in adjacent forest fragments?
14:15 – 14:30	Frank Krumm, Daniel Kraus and Marco Conedera	T13 Does integration satisfy demands on biodiversity in European forests? An attempt to clarify with a conceptual framework
14:30 – 14:45	Ignacio J. Diaz-Maroto, Pablo Vila-Lameiro and Olga Vizoso-Arribe	T14 Land-use changes in natural broadleaved forests in the NW Iberian Peninsula: effects of anthropogenic disturbances

14:45 – 15:00 Kevin M. Potter and Barbara S. Crane T15 Assessing the risk of climate change and other threats to forest biodiversity across the U.S. Southern Appalachian region

15:00 – 15:25 *Tea Break*

Symposium 3: The potential impact of Invasive Alien Species (IAS) on forest biodiversity into the future

Convenor: Nick McCarthy

According to the UN and FAO the single biggest to biodiversity is Invasive Alien Species. With the added impacts of climate change, coupled with increasing movement of people, goods and services around the world the threat of IAS to our forests and forest biodiversity is never more poignant. We have seen first-hand the problems that these species can cause if nothing is done (e.g. Grey squirrel, Rhododendron) promptly to control or eradicate the species early. The challenge facing researchers and practitioners alike will be not only to control the IAS already present but to ensure early identification of new threats and take appropriate measures to remove them and thus maintain the integrity of the forests and the biodiversity within. To this aim this symposium will examine the threat posed by IAS to forest biodiversity, revise the lessons from the past successes and mistakes and investigate whether new developments such as biocontrol, early warning systems, citizen science, and DNA barcoding have roles to play in the early identification and subsequent control of Invasive Alien Species in our forests.

15:25 – 15:30 Introduction

15:30 – 15:45 Nick McCarthy T16 Invasive species and the threat to Irish forestry

15:45 – 16:00 Bastian Egeter, Phillip J. Bishop and Bruce C. Robertson T17 DNA-based detection of frog predation by introduced mammals in New Zealand forest ecosystems

Open Session A. Chair: Nick McCarthy, Waterford Institute of Technology

16:00 – 16:05 Introduction

16:05 – 16:20 André Arsenault, Bill Clarke and Rein Van Kesteren T18 Distribution of the boreal felt lichen in a ribbed moraine landscape of Eastern Newfoundland

16:20 – 16:35 Robert J. Northrop T19 Development and assessment of an integrated set of wildlife habitat relationship models for terrestrial vertebrates

16:35 – 16:50 Miles Newman, Fraser J.G. Mitchell and Daniel L. Kelly T20 Exclusion of large herbivores: Long-term monitoring of plant community composition in Irish semi-natural oak woodlands

16:50 – 18:30 Poster Session

WEDNESDAY, 29th AUGUST 2012

09:00 – 09.45 **Keynote address 2** Forest plant species diversity: from a dark past to an uncertain future
Martin Hermy

Symposium 4: Using long-term data to investigate forest biodiversity

Conveners: Fraser Mitchell & Nadia Barsoum

Forest ecosystems are dynamic but the dominant tree cover can have turn over times from many decades to centuries. This provides a challenge for research into the biodiversity of forest ecosystems which is typically run over relatively short time frames. This symposium will explore the contribution to forest biodiversity research made by long-term monitoring and palaeoecology. This research delivers long-term datasets that can be used to explore successional trends in biodiversity but issues over temporal, spatial and taxonomic resolution still need to be

addressed. These datasets also provide an essential means of testing the validity of the chronosequence approach (substituting space for time) which is the most widely used technique in forest succession investigations.

09:45 – 09:50	Introduction	
09:50 – 10:05	Frans Vera	T21 The forest; A catastrophic shift of the wood-pasture to an alternative stable state on the expense of biodiversity
10:05 – 10:20	Keith J. Kirby	T22 Vegetation change in Wytham Woods (southern England) in a wider temporal and spatial context
10:20 – 10:35	Caroline Heiri, Harald Bugmann and Peter Brang	T23 50 years of natural dynamics in Swiss forest reserves: stand characteristics and developmental trends
10:35 – 10:50	Karen M. Moore, George F. Smith, Daniel L. Kelly and Fraser J.G. Mitchell	T24 How to grow a forest: The first 10 years of a long-term native woodland restoration experiment
10:50 – 11:05	Fraser Mitchell	T25 Taxonomic homogenisation in semi-natural woodland – the long story
11:05 – 11:20	Jenni Roche, Fraser Mitchell and Steve Waldren	T26 - Using palaeoecological techniques to assess biodiversity value and native status: a case study of Scots pine in Ireland

11:20 – 11:40 *Tea Break*

Symposium 5: Biodiversity research and restoration management of semi-natural woodlands and high conservation value forest in commercial forests

Conveners: Declan Little & John Cross

The concept of restoration management as opposed to strict conservation management is worthy of attention as the former has received considerable focus in many countries during the past decade with respect to semi-natural woodland management, and especially in Ireland. Restoration management differs from merely conserving remnants of existing high nature conservation value forests in that factors such as increasing habitat size, connectivity with similar and other habitat types and mitigating against negative land use impacts are also taken into account. Within commercial forests identification of high conservation value areas and opportunities to enhance biodiversity value are also becoming increasingly important especially with the advent of forest certification initiatives.

11:40 – 11:45	Introduction	
11:45 – 12:00	Carlo Urbinati, Luca Bagnara, Valeria Gallucci, Emidia Santini and Marcello Miozzo	T27 Forest structure restoration for improving the role of English yew and Silver fir in coppiced woodlands
12:00 – 12:15	Daniel L. Kelly and Anke C. Dietzsch	T28 Patterns in tree diversity in montane rainforest in Cusuco National Park, Honduras, Central America
12:15 – 12:30	Kevin Collins, Declan Little and John Cross	T29 Building a strategy for the sustainable management of Ireland's native woodlands
12:30 – 12:45	John L. Devaney, Marcel A.K. Jansen and Pádraig M. Whelan	T30 Negative neighbourhood effects in yew woodlands
12:45 – 13:00	Sandra Ikauniece, Guntis Brūmelis, Oļģerts Nikodemus, Raimonds Kasparinskis and Juris Zariņš	T31 Effects of soil, canopy and habitat fragmentation factors on vegetation in <i>Quercus robur</i> woods in the boreo-nemoral zone

13:00 – 14:00 *Lunch Break*

Symposium 6: Forests and bird conservation

Convenors: Mark Wilson & John Calladine

Habitat change is the single biggest threat to bird populations with vulnerable conservation status. The majority of threatened bird species across the globe are habitat specialists, and of these, more species depend on forests than on any other habitat type. Deforestation, fragmentation and other anthropogenic changes to natural and semi-natural forest habitats threaten many forest specialist birds around the world. At the same time, expansion of forests both through afforestation and through encroachment of scrub and woodland habitats following abandonment of agricultural land, constitute a threat to many specialists of open habitats. However, many areas where forest cover is now increasing have experienced significant deforestation in the past. New forests have the potential to enhance bird diversity in a wide variety of circumstances, though identifying the most effective ways of reconciling commercial and conservation agendas remains a challenge for forest managers. This symposium will explore the opportunities for and threats to bird populations posed by forest-related habitat change, and the complementary roles of native and plantation forests in securing the conservation status of forest birds, and the contribution forest and plantation management can make to the conservation of birds typical of more open habitats.

14:00 – 14:05 Introduction

14:05 – 14:20 Robert Milne and Lorne Bennett T32 Enhanced avian diversity in complex managed forests in multifunctional landscapes, southern Ontario, Canada

14:20 – 14:35 John Calladine T33 A comparison of the breeding bird assemblages associated with constant cover forestry and clear-fell rotation management systems in conifer plantations

14:35 – 14:50 Jeffery L. Larkin, Petra B. Wood, Than J. Boves, James Sheehan, David A. Buehler *et al.* T34 Cerulean warbler response to forest management: Can forest management produce more breeding birds?

14:50 – 15:05 Luc Barbaro, Eckehard G. Brocknerhoff and Inge van Halder T35 Edge effects on bird functional diversity and avian insectivory in mosaic forest landscapes: a transcontinental comparison

15:05 – 15:20 Mark W. Wilson, Jason Parker, Giacomo Dell’Omo, Barry O’Mahony, Thomas C. Kelly, Sandra Irwin and John O’Halloran T36 Foraging activity of breeding Hen Harriers (*Circus cyaneus*) in forested landscapes revealed by GPS

15:20 – 15:40 *Tea Break*

Open Session B. Chair: Daniel Kelly, Trinity College Dublin

15:40 – 15:45 Introduction

15:45 – 16:00 Veronika Fontana, Anna Radtke, Thomas Wilhelm, Erich Tasser, Stefan Zerbe and Ulrike Tappeiner T37 Effects of land-use change on plant species composition on traditional agro-forest systems in the Alps

16:00 – 16:15 Richard O’Hanlon and Tom Harrington T38 Fungal biodiversity in Irish forests: Non-native species support similar biodiversity but different communities of fungi from native forests

Symposium 7: Conserving native biodiversity in forests managed for bio-energy

Convenors: David Flashpohler & Chris Webster

As the value of forests for providing a feedstock for bioenergy increases, more land will likely be converted to fast growing tree plantations or other intensively managed forest systems to increase short-term production of cellulose. Worldwide, plantation forests account for about 5% of total forest cover, but this percentage is increasing at a rate of about 2-3 million ha yr⁻¹, particularly in some developing countries where much of the planet's biodiversity resides. In general, plantations and other intensively managed forests support fewer plant and animal species than native forests because they are simplified in terms of tree and other plant species richness and in terms of many structural and process related forest functions. However, native biodiversity can be retained in some bioenergy forests by using careful management in all stages of establishment, tending and harvest. Key considerations for conservation biodiversity as plantation forests grow as a proportion of total world forest cover include choice of plantation tree species, harvest frequency, rotation age, and care and management of biological legacies and forest understory plant and wildlife communities. We provide background and guidance that can be used to guide future bioenergy forest management in a new era of using forests to capture and store carbon and to generate bioenergy.

16:15 – 16:20	Introduction	
16:20 – 16:35	Eckehard Brockerhoff and Stephen Pawson	39 Risks and opportunities for biodiversity conservation in forests managed for bioenergy production
16:35 – 16:50	Chris Webster, David Flaspohler and Amber Roth	T40 Legacy tree retention balances commodity and conservation objectives in intensively-managed North American aspen forests
16:50 – 17:05	Robert Froese, Linda Nagel and Michael Premer	T41 Long term effects of whole-tree harvesting on productivity, soils and plant community dynamics in managed quaking aspen stands in the US Upper Midwest

17:05 – 18:00

IUFRO task force on biodiversity and ecosystem services

The meeting will discuss the development of this new IUFRO task force which was set up in 2011. Anybody interested is welcome. Contact: IUFRO division 7 & 8 coordinators Eckehard Brockerhoff (Eckehard.Brockerhoff@scionresearch.com) and Jean-Michel Carnus (jean-michel.carnus@pierreton.inra.fr).

19:00 – Late

Conference Dinner

Vertigo, County Hall, Carrigrohane Road, Cork

THURSDAY, 30th AUGUST 2012

08:30 – 18:30 **Mid conference tour**
Killarney National Park

FRIDAY, 31th AUGUST 2012

08:45 – 09:30 **Keynote address 3** Biodiversity conservation in a sustainable forest management framework: speculation, science and experiments
John Spence

Symposium 8: Biodiversity indicators in forest ecosystems

Convenors: Anna Barbati and Frédéric Gosselin

Biodiversity indicators are crucial for forest resource monitoring and management. They can either account for the fate of different kinds "forest species" (e.g. indicators based on bird censuses) or the state of conservation of forest habitats, or to monitor trends in the biodiversity component as related to the sustainable management of forests (e.g. the indicators used by the Montreal and MCPFE-Forest Europe regional processes on sustainable forest management). Inside these last processes, biodiversity indicators are probably those on which consensus is the weakest – both scientifically and politically. This is why the symposium aims at discussing issues on biodiversity indicators in forest ecosystems, especially – but not exclusively – addressing the following three points: (1) "testing" of forest biodiversity indicators or sets of indicators: magnitude of the relationship between the indicator and components of biodiversity (structural, compositional and functional); (2) sampling schemes and operational protocols and their implications for estimating biodiversity indicators and (3) "usefulness" of indicators, especially as related to decision making (political or else) and the perception of biodiversity indicators.

09:30 – 09:35 Introduction

09:35 – 09:50 Péter Ódor, András Bidló, Ildikó Király, Gergely Kutszegi, Ferenc Lakatos, Zsuzsa Mag, Sára Márialigeti, Juri Nascimbene, Ferenc Samu, Irén Siller and Flóra Tinya T42 Stand structure as indicator of forest biodiversity in temperate mixed forest: a multi-taxon approach

09:50 – 10:05 Frédéric Gosselin and Christophe Zilliox T43 Tree species diversity, composition and abundance as indicators of understory vegetation diversity in French mountain forests: variations of the relationship in geographical and ecological space

10:05 – 10:20 Nicolas Debaive, Nicolas Drapier, Loïc Duchamp, Yoan Paillet, Frédéric Gosselin, Max Bruciamacchie and Olivier Gilg T44 First large-scale assessment of the amount of CWD in French forest reserves

10:20 – 10:35 Piermaria Corona, Lorenzo Fattorini, Sara Franceschi, Walter Mattioli and Caterina Pisani T45 The ordering of trees communities by using diversity profiles

10:35 – 10:50 Nadia Barsoum T46 Applying a range of forest biodiversity indicators to investigate the influence of mixed tree species stands compared with single tree species stands across spatial scales

10:50 – 11:05 Laurent Larrieu, Pierre Gonin and Marc Deconchat T47 Preliminary results of implementation at wide scale of a taxonomic biodiversity indicator: the Potential biodiversity index (PBI)

11:05 – 11:20 Kevin M. Potter and Christopher W. Woodall T48 Incorporating evolutionary relationships into regional assessments of plot-level forest biodiversity

11:20 – 11:40 *Tea Break*

11:40 – 11:55	Ryan P. Powers, Nicholas C. Coops, Jessica L. Morgan, Michael A. Wulder, Trisalyn A. Nelson, Charles R. Drever and Steven G. Cumming	T49 A regionalization and biodiversity assessment of the Canadian boreal forest using remote sensing
11:55 – 12:10	Stephen Pawson, Michael Ulyshen, Thomas Adams, Thomas Paul, Chris Ecroyd, Jessica Kerr and David Henley	T50 Remotely sensing biodiversity in plantation forests
12:10 – 12:25	Anna Barbati, Marco Marchetti and Piermaria Corona	T51 European Forest Types and Forest Europe SFM indicators: a snapshot approach for monitoring forest biodiversity at European level
12:25 – 12:40	George F. Smith, Amanda Browne, Aileen O'Sullivan, Pat Neville and Richard Nairn	T52 Criteria and indicators for high conservation value forest: adapting forest stewardship council principles for practical forest management
12:40 – 12:55	Anne Holma	T53 Biodiversity indicators for forest industry

12:55 – 14:00	<i>Lunch Break</i>	
---------------	--------------------	--

Open Session C. Chair: Tom Kelly, University College Cork

14:00-14:05	Introduction	
14:05 – 14:20	Anke C. Dietzsch, Linda Coote, Mark W. Wilson, Conor Graham, Lauren Fuller, Tom Gittings <i>et al.</i>	T54 A comparison of the initial responses of plants, invertebrates and birds to the afforestation of grassland habitats
14:20 – 14:35	Gorik Verstraeten, Lander Baeten, Bart Muys and Kris Verheyen	T55 Compositional shifts in the understorey vegetation after the conversion from mixed deciduous forest to spruce monocultures
14:35 – 14:50	Josephine Haase, Jaboury Ghazoul and Michael Scherer-Lorenzen	T56 Effects of tree species and functional diversity on the resistance against insect herbivores
14:50 – 15:05	Kimiko Okabe, Satoshi Yamashita, Tsutomu Hattori, Motohiro Hasegawa, Hiroshi Tanaka and Shun'ichi Makino	T57 Conservation of deadwood could conserve microscopic organisms such as mushroom mites
15:05 – 15:20	Thomas Bolger, Julio Arroyo, Joan Kenny and Kirsty Daly	T58 The mite (Acarina) fauna of Irish forests - a study of the contribution of forests to the Irish fauna and of the differences associated with tree species and microhabitat

15:20 – 15:40	<i>Tea Break</i>	
---------------	------------------	--

Symposium 9: Conservation management for invertebrates in forest litter and woody debris

Convenor: Anne Oxbrough and John Spence

Invertebrates are a key component of forest biodiversity, with species appealing to many, in their own right, as highly desirable components of the natural world. Furthermore, they fulfil vital roles in ecosystem function, including central functions in decomposition, nutrient cycling and terrestrial food webs. Therefore, understanding the interactions between these organisms and their environment will help elucidate and manage the impact of forestry activities on forest function. The latter is a matter of particular importance, given the expected demand for forest products, ecosystem services and recreational opportunities into the future. Forests are typically managed at stand and landscape levels, however invertebrates are also influenced by factors acting at much smaller scales. Furthermore, there is increasing evidence that at these small scales stands are homogenised to some extent by modern forest practices, likely reducing the ability of managed stands to sustain their characteristic organismal diversity. This symposium will focus on research at scales relevant to the ecological requirements of invertebrates in litter and woody debris and address how their needs can be included in policy for sustainable forest management. This symposium will bring together leading researchers in invertebrate ecology, and litter and deadwood dynamics, from across the globe, representing boreal and temperate forest ecosystems and exhibiting a range of management intensity. Each speaker will make management recommendations to aid the inclusion of invertebrates into forest policy which aims to maintain ecosystem health and biological diversity.

15:40 – 15:45	Introduction	
15:45 – 16:00	David H. Wise	T59 Spiders, decomposition rates and global climate change ()
16:00 – 16:15	Jari Niemelä, Johan Kotze, Jarmo Saarikivi, Stephen Venn and Ferenc Vilsics	T60 Invertebrates in urban forests: diversity, distribution and management recommendations
16:15 – 16:30	Hervé Jactel, Antoine Brin, Thierry Labbé, Céline Meredieu and Stephen Pawson	T61 Modelling the impact of forest management on deadwood and associated saproxylic beetle diversity
16:30 – 16:45	Kenichi Ozaki, Katsuhiko Sayama and Akira Ueda	T62 Conserving saproxylic beetles across stand age gradients of plantation forests in a human modified landscape
16:45 – 17:00	Stephen Pawson and Alwin Sky	T63 Saproxylic diversity and its contribution to wood decomposition processes in an intensely managed forest ecosystem
17:00 – 17:15	Timothy T. Work and Suzanne Brais	T64 Impact of post-harvest biomass removal on epigaeic invertebrates in jack-pine forests of Western Quebec, Canada
17:15 – 17:45	Conference closing and Prize giving John O'Halloran, University College Cork	
