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Wildfire Regime Shifts in Temperate Forest Ecosystems: International Symposium in New Zealand

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Wildfire Regime Shifts in Temperate Forest Ecosystems: International Symposium in New Zealand

Final Report for JFSP Project 12-5-01-2



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Abstract

This project consisted of organizing and executing a one-day symposium on “Wildfire Regime Shifts in Temperate Forest Ecosystems” in conjunction with the triennial meeting of the Southern Connection Congress. The VIIth Southern Connection Congress drew together more than 350 environmental scientists and resource managers for its triennial meeting in Dunedin, New Zealand from January 25 to 30, 2013. The Southern Connection Congress (SCC) is a meeting of interdisciplinary researchers and natural resource managers who are interested in the biota and ecosystems of the temperate latitudes of the southern hemisphere. Attendees are from a wide range of research and professional disciplines including ecology, systematic biology, biogeography, earth sciences, paleobiology, conservation biology, and forest sciences. It is attended by scientists and resource managers from all over the world who share an interest in terrestrial temperate-latitude ecosystems of the southern hemisphere. It is the most prominent venue for presentation of research in environmental sciences conducted in southern hemisphere temperate zone ecosystems.

For the January 2013 SCC we organized an all-day symposium on fire ecology, climate and human impacts on fire regimes, and management challenges related to the effects of humans and climate change on fire. Funding was provided by the Joint Fire Science Program (JFSP) to offset travel costs of four invited speakers and organizers and of one graduate student. We included east-west southern hemisphere perspectives (e.g. South America, South Africa, and Australia/New Zealand) as well as north-south cross Pacific perspectives (e.g. including western North America). We invited early-career fire researchers working in the southern and northern hemispheres to promote long-term collaborations that will foster new ideas in fire science research. The symposium entitled “Wildfire Regime Shifts in Temperate Forest Ecosystems” consisted of 16 invited and 2 contributed presentations, each of 20 minutes. This was the largest of the more than 20 symposia at the SCC, and it was one of the best attended drawing audiences of approximately 150 people for each of the four sessions.

The “Wildfire Regime Shift” symposium identified parallel lines of research from different subdisciplines and different geographical regions, ranging from mainland Australia, Tasmania, Chile, Argentina, South Africa, New Zealand, and the U.S.A. JFSP support helped many of the speakers participate in a one-day international workshop entitled Wildfire PIRE (funded by the Partnerships in Research and Education Program of the U.S. National Science Foundation) held in Dunedin the day prior to the initiation of the SCC. Wildfire PIRE includes a strong emphasis on paleo-fire research derived from sedimentary records as well as linkages to modern fire ecology and fire-climate modeling. Thus, there was an excellent opportunity to develop collaborations and experience cross-fertilizations from a diverse range of research approaches to wildfire. Many of these outcomes are being summarized in a synthesis paper on fire, climate, and people incorporating experiences from the western U.S., Tasmania, New Zealand and Patagonia which is currently being prepared for a peer-reviewed journal.

I. Background and Purpose

This project consisted of organizing and executing a one-day symposium on “Wildfire Regime Shifts in Temperate Forest Ecosystems” in conjunction with the triennial meeting of the Southern Connection Congress. The Southern Connection is a grass-roots organization created in 1991 by a group of 25 researchers with interests in terrestrial ecology and biogeography who met in Hawaii with financial support from the Mellon Foundation. The first meeting was held in Hobart, Australia in 1993, and subsequent Southern Connection Congresses have been held in Valdivia (Chile), Christchurch (New Zealand), Cape Town (South Africa), Adelaide (Australia), and Bariloche (Argentina). Attendees of the Southern Connection Congress (SCC) are from a wide range of research and professional disciplines including ecology, systematic biology, biogeography, earth sciences, paleobiology, conservation biology, and forest sciences. It is attended by scientists and resource managers from all over the world who share an interest in terrestrial temperate-latitude ecosystems of the southern hemisphere. The continued success of SCCs reflects the realization among attendees of the great benefits from comparing research and resource management perspectives along both an east-west southern hemisphere axis as well as the more common northern-southern hemisphere axis. The triennial SCCs have become the premier venue for presentation of research on southern hemisphere biota and ecosystem change across a range of time scales represented by modern ecological studies as well as paleoecology and paleobiology.

In previous SCCs, land and fire managers and researchers have interchanged experiences from a myriad of topics across the world, including fire suppression, historical range of variability, fire restoration, and fire mitigation in the wildland-urban interface (WUI). These issues fit the mission of the JFSP and are of societal and global relevance. For example, issues related to climate change and catastrophic fires in the WUI, such as those in the suburbs of Melbourne during black Saturday in Australia, in 2009, are relevant to the Southern Connections Congress and to the clientele of the JFSP. After a decade of drought, extreme weather conditions promoted massive fires that caused around 170 casualties, 7,562 people displaced, 450,000 ha (1,100,000 acres) burnt, and over 3,500 structures destroyed. Black Saturday resulted in a paradigm shift in fire research and management in Australia, particularly in terms of fire responses and fire behavior which are analogous to and highly relevant to experiences and perspectives of fire researchers and managers in western North America. Thus the SCC is an ideal venue for a symposium on “Wildfire Regime Shifts in Temperate Forest Ecosystems.”

We invited leading international fire researchers to address one or more of the following three themes in our symposium:

1) Fire-climate relationships: past behavior and future forecasting.

What are the effects of climate variability on fire activity, emphasizing teleconnections to large-scale climate drivers such as El Niño-Southern Oscillation, Interdecadal Pacific Oscillation, Indian Ocean Dipole, and the Antarctic Oscillation? Teleconnections of regional weather to these major climate drivers are the basis for much current research predicting fire risk. How these climate influences differentially affect different fuel types is a question of intense interest among researchers and fire managers. We invited presentations on this theme based on a broad assortment of techniques, including documentary fire records, tree-ring fire reconstructions, and remote sensing, to assess the impact of climate change on fire

activity and improve our understanding of how major climate drivers can be incorporated into forecasting tools.

2) Human impacts on fire regimes through land-use practices

In many parts of the world fire regimes are being modified due to human activities such as the use of fire in land clearance for agriculture and livestock raising, increased accidental or intentional burning due to easier access to formerly remote regions, vegetation and fuel changes due to invasive exotic plant species, and land cover changes in the WUI. We invited presentations that focus on how land-use changes (including fuel treatments) potentially alter fire regimes and include a variety of research approaches from retrospective tree-ring reconstructions to long-term field monitoring, spatial modeling and remote sensing applications. The goal was to share insights and experience on understanding and mitigating the impacts on fire related to land-use changes and growth of the WUI in fire-prone ecosystems in the Southern hemisphere and elsewhere.

3) Post-fire vegetation dynamics and feedbacks on subsequent fire: an inter-hemispheric comparison

The rate of burning of many forests and shrublands around the world is predicted to increase under a warming climate. However, in many regions these climate-driven increases in frequency and extent may be exacerbated by properties of post-fire vegetation that produce a positive feedback, making recently burned areas increasingly prone to subsequent fire. This increased susceptibility can result from changes in vegetation stature, fuel loading and continuity, and effects of vegetation on microclimate/fuel moisture compared to conditions in the pre-burned community. We brought together researchers evaluating post-fire vegetation dynamics in the northern and southern hemispheres in order to compare the feedbacks of post-fire vegetation on susceptibility to subsequent fire and determine (1) what factors drive the strength of the positive feedbacks, (2) in what types of environments are these positive feedbacks most likely to lead to abrupt, nearly irreversible changes from the historical vegetation, and (3) the management options available to reduce the probability of permanent changes in vegetation driven by increasing flammability of the post-fire vegetation.

II. Conference Format

The SCC Program including the Wildfire Regime Symposium agenda on Thursday January 24 is appended to this report. The Symposium consisted of 16 invited and 2 contributed presentations, each of 20 minutes. This was the largest of the more than 20 symposia at the SCC, and it was one of the best attended drawing audiences of approximately 150 people for each of the four sessions. The symposium occupied one full day of the SCC. The abstracts of the presentation can be downloaded from the website of the VIIth Southern Connection Congress: <http://www.otago.ac.nz/V11-southern-connection/abstracts/> Several of the presenters or co-presenters in our Symposium also presented papers in other symposia on a wide range of fire-related subjects in the contexts of modern and paleoecology, land management, and communication of climate change science to public audiences.

The Wildfire Regime Shift symposium was coordinated with a one-day meeting of an NSF-sponsored workshop entitled Wildfire PIRE (Partnerships in Research and Education) held in Dunedin the day prior to the initiation of the SCC. Wildfire PIRE includes a strong emphasis on paleo-fire research derived from sedimentary records as well as linkages to modern fire ecology and fire-climate modeling. Thus, there was an excellent opportunity to develop collaborations and experience cross-fertilizations from a

diverse range of research approaches to wildfire. Many of the outcomes of the Wildfire Regime Shift symposium and fire-related discussions at the SCC are being summarized in a synthesis paper on fire, climate, and people incorporating experiences from the western U.S., Tasmania, New Zealand and Patagonia which is currently being prepared for a peer-reviewed journal.

III. Deliverables

The most significant deliverable was the planning, organization, and execution of the Wildfire Regime Shift Symposium. JFSP supported participants (Veblen, Tepley, Holz, and Paritsis) presented or co-presented four papers in the Wildfire Regime Shift Symposium. Each chaired one of the four sessions of the Symposium.

Papers presented by JFSP supported participants were as follows:

- a) Post-fire vegetation dynamics and feedbacks on fire susceptibility along a 150-year chronosequence in Nothofagus forests of New Zealand
Authors: Alan J. Tepley, University of Colorado at Boulder, USA, Thomas T. Veblen, University of Colorado at Boulder, USA, George L.W. Perry, University of Auckland, NZ
- b) Regional-scale analysis of spatial fire occurrence in western Patagonia: Vegetation type, humans and feedbacks
Authors: Juan Paritsis, INIBIOMA-CONICET, Andrés Holz, School of Plant Science-UTAS, Thomas Veblen, University of Colorado, Thomas Kitzberger, INIBIOMA-CONICET
- c) Interannual fire-climate teleconnections across the southern temperate latitudes.
Authors: Andres Holz, University of Tasmania, James Risbey, CSIRO Marine and Atmospheric Research, Tasmania, Australia, Thomas T. Veblen, University of Colorado, USA
 Sam Wood, University of Tasmania, David Bowman, University of Tasmania
- d) Post-fire successional trajectories of temperate rainforests: Synthesizing empirical knowledge into models for predicting forest dynamics.
Authors: Alvaro G. Gutierrez, ETH Zurich, Jan Bannister, University of Freiburg, Andres Holz (presenter), University of Tasmania, Harald Bugmann, ETH Zurich, Che Elkin, ETH Zurich

In addition, Veblen presented a paper on “Communicating to public audiences about climate impacts on wildfire, tree mortality, and bark beetle outbreaks in the U.S. Rocky Mountains” in a Symposium entitled “Messengers of Change: Taking Climate Science to the World.” This session was attended by more than 100 people, and it included high profile speakers such as New Zealand Landcare’s chief scientist on climate change research and leading social science experts on communicating science to general audiences.

JFSP support was also provided to a University of Colorado Ph.D. student (Monica Rother) who attended the Wildfire Regime Shift symposium, other symposia at the SCC, and the 1-day Wildfire PIRE meeting. After the SCC she spent 6 weeks conducting field research on two fire-ecology research projects in New Zealand and Tasmania funded by the U.S. National Science Foundation and the Australian Research Council.

As an outreach report on the meeting Veblen was interviewed for an article on fire risk and exurban development published Jan. 27, 2013 in the Otago Daily Times of Dunedin:

<http://www.odt.co.nz/news/dunedin/243690/tough-calls-vital-urban-growth-researcher>

The final deliverable will be a synthesis paper on fire, climate and people interactions in the western U.S., Tasmania, Patagonia, and New Zealand. This paper reflects work presented in our Wildfire Regime Shift Symposium as well as in other symposia at the SCC. It currently is in preparation for submission to a peer-reviewed journal in September 2013.

Table 1. Summary of deliverables and current status

Deliverable	Description	Current Status
List	List of fire symposium participants— Submitted to local SCC organizers	Completed Oct. 1, 2012
Program	Conference Program— Collaboratively completed with the local SCC organizers The Conference Program is appended below.	Completed Jan. 5, 2013
Abstracts	Abstracts from the fire symposia— Gathered by the symposium organizers in Oct. 2012 and published on the SCC website in Jan. 2013 http://www.otago.ac.nz/V11-southern-connection/abstracts/	Completed Jan. 25, 2013
Meeting report—public outreach	Brief announcement of the results of the symposium— Interview on wildland fire hazard and exurban development published by the Otago Daily Times, Dunedin http://www.odt.co.nz/news/dunedin/243690/tough-calls-vital-urban-growth-researcher	Completed Jan. 27, 2013
Peer-reviewed article	Synthesis paper: research agenda on wildfire in relation to changes in land use and climate in the western U.S., Tasmania, and Patagonia to be submitted to a peer-reviewed journal	In preparation June 21, 2013

The Program of the VII Southern Connection Congress (January 2013, Dunedin, New Zealand) is appended below.

Conference Overview

Venues: Plenary sessions: **Castle 2** lecture theatre
 Other talks: **Castle** and **Burns** lecture theatres
 Poster session: University College (**UniCol**)
 Lunches and morning teas: **Castle** Theatre Complex
 Welcome and registration reception: **University College**

Sunday 20 January 3.00 – 8.00pm			
University College: Welcome and Registration Reception			

Monday 21 January			
Castle 2 Conference Opening Plenary: Christian Körner			
Castle 1	Castle 2	Burns 1	Burns 2
Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere	Organismal responses to a changing climate in the Southern Hemisphere	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history
Morning tea			
Castle 1	Castle 2	Burns 1	Burns 2
Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere	Organismal responses to a changing climate in the Southern Hemisphere	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history
Lunch			
Castle 2 Plenary: Lionel Carter			
Castle 1	Castle 2	Burns 1	Burns 2
Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere	Biogeographic relationships of Cenozoic terrestrial vertebrates of Australasia	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history
Afternoon tea			
Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere	Contributed papers	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history/ Contributed papers
Celebrating 20 years of Southern Connection, Wine and Cheese, Art and Music 6.00pm-8.00pm, at the Atrium, Otago Museum			

Tuesday 22 January

Castle 2 Plenary: Michael Walker

Castle 1	Castle 2	Burns 1	Burns 2
Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Cenozoic island biogeography: integrating geology, paleontology and phylogeny	Messengers of Change	Pollination systems- Diversity and disturbance in the Southern Lands

Morning tea

Castle 1	Castle 2	Burns 1	Burns 2
Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Cenozoic island biogeography: integrating geology, paleontology and phylogeny	Messengers of Change/ Contributed papers	Pollination systems- Diversity and disturbance in the Southern Lands/ Contributed papers

Lunch

Castle 2 Plenary: Mick Clout

Castle 1	Castle 2	Burns 1	Burns 2
Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Cenozoic island biogeography: integrating geology, paleontology and phylogeny / Northern connections: the success and failure of biological links with the Northern Hemisphere	Contributed papers	Contributed papers

Afternoon tea

Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Northern connections: the success and failure of biological links with the Northern Hemisphere	Contributed papers	Contributed papers
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Congress Dinner commencing at 7.30 pm at the Savoy Restaurant

Wednesday 23 January

Mid-Congress Field Trips

PUBLIC LECTURE: Plenary Speaker Professor Lesley Hughes (Castle 2) at 7.30 pm

Thursday 24 January

Castle 2 Plenary: Alexander Schmidt

Castle 1	Castle 2	Burns 1	Burns 2
Wildfire regime shifts in temperate forest ecosystems	Amber: paleontological potential for the Southern Hemisphere	Predictions from climate change: benefits and losses for southern reptiles and amphibians	Southern radiations: processes driving diversification

Morning tea

Castle 1	Castle 2	Burns 1	Burns 2
Wildfire regime shifts in temperate forest ecosystems	Amber: paleontological potential for the Southern Hemisphere	Predictions from climate change: benefits and losses for southern reptiles and amphibians	Southern radiations: processes driving diversification

Lunch

Castle 2 Plenary: Angus MacIntosh

Castle 1	Castle 2	Burns 1	Burns 2
Wildfire regime shifts in temperate forest ecosystems	New Caledonia: understanding an enigmatic biota	Chile/New Zealand: The continental scale experiment	Southern radiations: processes driving diversification

Afternoon tea

Wildfire regime shifts in temperate forest ecosystems	New Caledonia: understanding an enigmatic biota/ Contributed papers	Chile/New Zealand: The continental scale experiment	Ecological restoration: across the land and sea
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Poster and film session: 6:00-8:00 pm in the University College (UniCol) Common Room followed by Future Voices: Films from Otago and Montana

Friday 25 January

Castle 2 Plenary: Janet Wilmshurst

Castle 1	Castle 2	Burns 1	Burns 2
Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	New insights into the ecological consequences of late Quaternary Southern Hemisphere extinctions	Origins, functioning and futures of Subantarctic Ecosystems	Learning more about wilding tree management

Morning tea

Castle 1	Castle 2	Burns 1	Burns 2
Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	New insights into the ecological consequences of late Quaternary Southern Hemisphere extinctions	Origins, functioning and futures of Subantarctic Ecosystems	Learning more about wilding tree management

Lunch

Castle 2 Plenary: Jon Waters

Castle 1	Castle 2	Burns 1	Burns 2
Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	New insights into the ecological consequences of late Quaternary Southern Hemisphere extinctions/ Southern biological connectivity, the effect of the WWD	Change, disaster, resilience and future-proofing of urban environments	Learning more about wilding tree management

Afternoon tea

Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	Southern biological connectivity, the effect of the WWD/ Contributed papers	Contributed papers	Learning more about wilding tree management/ Contributed papers
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Closing Ceremony: Glenn Stewart, President Southern Connection Congress, at 5.25 pm in Castle 2

Conference Programme

Monday 21 January, MORNING

Time	Venue: Castle 2
0830–0845	Conference opening and welcome
0845–0900	Southern Connection Congress Welcome – Peter Raven
0900–0935	Plenary: Christian Körner Alpine ecosystems under global change

	Venue: Castle 1	Venue: Castle 2
	Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere
0940–1000	Rewi Newnham: New Zealand peatland archives and the southern westerlies	Christian Körner: The high elevation treeline as a bioclimatic reference
1000–1020	Matt McGlone: The early Holocene westerly wind minimum in New Zealand	Frida Piper: Mediterranean treelines: the hidden role of seasonal drought on the sink activity of trees
1020–1040	Richard Levy: A new high-resolution record of South Island hydrology from Lake Ohau sediments, South Island, New Zealand	Kerry Bridle: Recovery of alpine vegetation on the Eastern Central Plateau, Tasmania: results from 20 years of monitoring and future potential under climate change
1040–1110	Morning tea	
	Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere
1110–1130	Krystyna Saunders: Last glacial and Holocene westerly wind changes on sub-Antarctic Macquarie Island	Janice Lord: Response of alpine vegetation to altered snow regimes in Otago, New Zealand
1130–1150	Jessica Hinojosa: Changes in the westerly winds: an investigation of Holocene wind variability using sedimentary and water column records	Mary Arroyo: Plant breeding systems and pollinator availability in alpine ecosystems along the latitudinal gradient in the southern South American Andes
1150–1210	Andrew Lorrey: A reconstruction of Holocene atmospheric circulation variability, terrestrial climate anomalies and synoptic climate forcing mechanisms for New Zealand	Stephan Halloy: Informing sustainable land management in the Andes by mapping and ground-truthing biome shifts with climate change
1210–1230	Patrick De Deckker: A 40 ky year record of frontal shifts linked to the westerly wind belt offshore southern Australia: implications for broad inter-oceanic connections	Catherine Pickering: Effect of climate on Australian alpine vegetation using the GLORIA monitoring protocol
1230–1330	Lunch	

Monday 21 January, MORNING

	Venue: Burns 1	Venue: Burns 2
	Organismal responses to a changing climate in the Southern Hemisphere	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history
0940–1000	Nigel Andrew: Can temperate insects take the heat? The risks of high temperature exposure to meat ants caused by climate change	David McWethy: A high-resolution chronology of the Initial Burning Period following Polynesian arrival in New Zealand
1000–1020	Grant Wardell-Johnson: Identifying refugia in a warming, drying global biodiversity hotspot	Cathy Whitlock: Human-caused and climate-driven thresholds in past fire activity: insights from paleoecological studies in temperate forests
1020–1040	Mary Morgan-Richards: Range shifts and adaptation to local conditions in parapatric insects	Virginia Iglesias: Biogeographical history of <i>Austrocedrus chilensis</i> on the eastern Patagonian Andes
1040–1110	Morning tea	
	Organismal responses to a changing climate in the Southern Hemisphere	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history
1110–1130	David Wharton: Living on the edge: the distribution and phylogenetics of nematodes in Victoria Land, Antarctica	Peter McIntosh: Did megafaunal extinction or climate change cause increase in erosion post-40 ka BP in Tasmania? The evidence from studies in the forest estate
1130–1150	Brent Sinclair: Does winter matter in the mild? Changing winters and Southern Hemisphere insects	Hahjung Chin: Late Holocene fire history and the impact on vegetation in northern Tasmania
1150–1210	Mariana Bulgarella: Do high-elevation populations of the Wellington tree weta (<i>Hemideina crassidens</i>) show metabolic cold adaptation?	Simon Haberle: A high-resolution record of fire and vegetation change from Bega Swamp, southeastern Australia
1210–1230	Giovanni Di Virgilio: Identifying transitional biotic turnover zones and their association with climate, topography and lithology	Scott Mooney: Human-fire interactions in the Sydney Basin: a compilation of charcoal and archaeological records from multiples sites within the Sydney Basin bioregion
1230–1330	Lunch	

Monday 21 January, AFTERNOON

Time	Venue: Castle 2
1330–1405	Plenary: Lionel Carter The Southern Ocean - responding to past and present change

	Venue: Castle 1	Venue: Castle 2
	Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere
1410–1430	Samuel Marx: Variability in the position of the mid-latitude westerlies during the mid to late Holocene: insights from Australian dust emissions	Alan Mark: GLORIA in New Zealand: progress with monitoring at two sites
1430–1450	Philip Hughes: Palaeoclimate and human occupation in arid South Australia	Catherine Kleier: Conservation, growth, and demography of <i>Azorella compacta</i> in Parque Nacional Lauca, Chile
1450–1510	Maisa Rojas: Southern Hemisphere Large Scale Circulation: sensitivity to glacial versus extreme warm conditions	Priscilla Wehi: Adaptive foraging in a giant alpine insect, the Otago stone weta
1510–1530	Patricio Moreno: Westerly driven vegetation and fire regime shifts at centennial timescales in southwestern Patagonia (52°S) over the last 3000 years	Susanna Venn: Environmental filters in an alpine environment: a test of plant functional traits for understanding mechanisms of change
1530–1600	Afternoon tea	
	Modern and paleoclimate perspectives on the Southern Hemisphere westerly wind field	Alpine ecology in the Southern Hemisphere
1600–1620	Christopher Moy: A South American perspective on Holocene Southern Hemisphere Westerly Wind Variability	Pascale Michel: Changes in both temperature and precipitation affect plants at various stages of their lifecycle, in alpine grassland ecosystems of Western Norway
1620–1640	Oscar Pesce: Detailed climatic, fire and vegetation variability during the last 18,000 years at Lago Lepue (42°S-72°W), Isla Grande de Chiloe, Chile	Patrick De Deckker: Progressive warming over the last 450,000 years offshore Tasmania of relevance to the alpine flora on the island
1640–1700	Juan-Carlos Aravena: <i>Nothofagus betuloides</i> tree-ring growth patterns and climate variability in postglacial landscapes of Santa Ines Island, southern Chile	Claudia Voelckel: Signatures of hybridization in defense-related genes as a feature of the <i>Pachycladon</i> radiation in New Zealand's Southern Alps
1700–1720	Tom Brookman: Stable isotope dendroclimatology in New Zealand: lessons learned from kauri (<i>Agathis australis</i>) and cedar (<i>Libocedrus bidwillii</i>)	Agustina Barros: Recreation ecology research in the dry Andes: Aconcagua Provincial Park
1720–1740	Ralf Ohlemüller: Room to expand past shifts in southern hemisphere climate space and possible consequences for current biodiversity patterns	Shawn Laffan: Incorporating geographic ranges into measures of species and phylogenetic turnover
1740–1800	Bjorn Serigstad: The Kelvin wave driven coastal upwelling off Angola	Discussion
1800–2000	Celebrating 20 years of Southern Connection, Wine and Cheese, Art and Music, Atrium, Otago Museum	

Monday 21 January, AFTERNOON

	Venue: Burns 1	Venue: Burns 2
	Biogeographic relationships of Cenozoic terrestrial vertebrates of Australasia	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history
1410–1430	Alan Tennyson: When did New Zealand's terrestrial vertebrates evolve?	Patrick Moss: Holocene fire regimes and vegetation change from the seasonally Dry Tropics of north-eastern Australia
1430–1450	Trevor Worthy: Insights from the St Bathans Fauna on the Early Miocene land and freshwater animals of Zealandia	Andrew Nield: Dispersal and the comparative spatial ecology of four large-seeded species in the Jarrah forests of southwestern Australia
1450–1510	Suzanne Hand: Miocene mystacinids (Chiroptera: Noctilionoidea) indicate a long history of endemic bats on insular New Zealand	Maurizio Rossetto: The impact of temporal environmental instability on the distribution of rainforest diversity
1510–1530	Jon Lindqvist: Microbial carbonates and shelly fauna of Miocene Lake Manuherikia, Central Otago, New Zealand: implications for variations in lake chemistry, and syndimentary tectonics	Rohan Mellick: The impact of Quaternary climate change on the distribution of diversity in <i>Podocarpus elatus</i> (Podocarpaceae)
1530–1600	Afternoon tea	
	Contributed papers	Ecological thresholds, triggers, and traps in Southern Hemisphere forest history/ Contributed papers
1600–1620	Stephan Nylinder: Phylogeny of <i>Calceolaria</i> L. (Calceolariaceae) - genes vs. morphology	Kathryn Taffs: Holocene environmental change in sub tropical eastern Australia. Evidence from geochemical and biological proxies
1620–1640	Rob Smissen: A new view of hybridisation and speciation in the New Zealand <i>Fuscospora</i> beech species	Amy Adams: Predicting distribution and habitat selection for an invasive species, the common brushtail possum (<i>Trichosurus vulpecula</i>), in an urban environment
1640–1700	P Smouse: Concordant geographic patterns of climate/morphology/genotype for <i>Embothrium coccineum</i> , revealed by Multivariate Anisotropic Autocorrelation Analysis	Thomas Etherington: Estimating dispersal transfer costs of the brushtail possum using least-cost modeling
1700–1720	J Burke: Divergent lineages in two species of <i>Dendrobium</i> orchids (<i>D. speciosum</i> and <i>D. tetragonum</i>) correspond to major geographic breaks in eastern Australia	Matthew Larcombe: Quantification of wildling establishment from Australian <i>Eucalyptus globulus</i> plantations
1720–1740	E Fagan-Jeffries: Hidden beneath the surface: exploring the evolution and systematics of <i>Nedsia</i> , a subterranean amphipod genus from the Pilbara region of West Australia	Michael Samways: Loss of 60 million years of dragonfly evolution narrowly averted by controlling invasive alien trees
1740–1800	Ulf Swenson: Are Asteraceae 1.5 billion years old? A reply to Heads	Peter Convey: Biological invasions in the sub-Antarctic
1800–2000	Celebrating 20 years of Southern Connection, Wine and Cheese, Art and Music, Atrium, Otago Museum	

Tuesday 22 January, MORNING

Time	Venue: Castle 2
0840–0915	Plenary: Michael Walker He kitenga no te moana, He kitenga no te whenua: Views from the land and the sea

	Venue: Castle 1	Venue: Castle 2
	Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Cenozoic island biogeography: integrating geology, paleontology and phylogeny
0920–0940	Bill Henwood: Celebrating progress in the conservation and protection of indigenous temperate grasslands	Nick Mortimer: Eocene-Miocene islands of the Zealandia archipelago: evidence from sandstones and limestones
0940–1000	Clinton Carbutt: Towards the conservation and sustainable management of temperate grasslands: a South African perspective	Rupert Sutherland: Eocene and Oligocene paleogeography between Australia, New Caledonia and New Zealand
1000–1020	Louise Gilfedder: Developing management strategies using an expert workshop approach for Tasmanian lowland native grasslands under climate change	James Scott: Land ahoy! An Oligocene shoreline on Otago Schist and implications for the total submergence of Zealandia
1020–1040	Grant Wardell-Johnson: Grazing and environmental interactions in the forest-steppe of southern Patagonia	Daphne Lee: Oligocene paleogeography of southern New Zealand: sedimentological/paleontological evidence for forested land, estuaries, rocky and sandy shores
1040–1110	Morning tea	
	Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Cenozoic island biogeography: integrating geology, paleontology and phylogeny
1110–1130	Stephan Halloy: Indicators of biodiversity status in temperate grasslands: Integrating multiscale measures for environmental accounting and product certification	Julie Palmer: South King Country – Zealandia’s Ark?
1130–1150	Matthew Aaron Krna: Are the tussock grasslands of Mount Tongariro scared of heights, volcanic eruptions or both?	Dallas Mildenhall: Does palynology give us any clues to the possible inundation of Zealandia in the Late Oligocene?
1150–1210	Richard Williams: Climate change, fire and Australia's alpine grasslands: resilience or doom and gloom?	Jennifer Bannister: Solving problems in the identification of living and fossil leaves: how cuticles can help
1210–1230	Dave Kelly: Will global warming alter mast seeding patterns in tussock grasslands?	John Conran: Kiwi Curare: Miocene Menispermaceae in New Zealand
1230–1330	Lunch	

Tuesday 22 January, MORNING

	Venue: Burns 1	Venue: Burns 2
	Messengers of Change	Pollination systems-Diversity and disturbance in the Southern Lands
0920–0940	Dennis Aig: The rhetoric of engagement: climate science and a word-weary public	Caroline Gross: Rebuilding pollination networks: are trajectories for recovery predictable and does it matter?
0940–1000	Thomas Veblen: Communicating to public audiences about climate impacts on wildfire, tree mortality, and bark beetle outbreaks in the US Rocky Mountains	Linda Newstrom-Lloyd: Replenishing bee forage deficits due to removal of environmental weeds in New Zealand
1000–1020	Lloyd Davis: Does the messenger kill the message: how climate change and scientists come across on television news	David Pattemore: Compensation in pollination systems in New Zealand: bats, rats and bumblebees
1020–1040	David Whitehead: The dilemma of communicating research findings for scientists	Alastair Robertson: The resilience of New Zealand pollination systems to changes in the fauna: persistence, replacement, and losses of interactions
1040–1110	Morning tea	
	Messengers of Change/ Contributed papers	Pollination systems-Diversity and disturbance in the Southern Lands/ Contributed papers
1110–1130	Angela Wardell-Johnson: Climate change: messages for applying communications of the science	Daniel Stouffer: How exotic species integrate into pollination networks
1130–1150	Catharine Hodson: Communicating science through art: a contemporary creative practice	Jenny Ladley: Seedfall monitoring: measuring plant-frugivore interactions with seed traps
1150–1210	Malika Virah Sawmy: Tools needed from long-term records to feed people and birds	Anna Astorga: Macroinvertebrate diversity in two adjacent catchments of the Chilean Patagonia: the role of local and regional environmental factors
1210–1230	Eric Oliver: Projected Tasman Sea warming and extremes in the 21st century	Cecilia Carrea: Contributions to biodiversity within a catchment: the importance of interdrainage connectivity
1230–1330	Lunch	

Tuesday 22 January, AFTERNOON

Time	Venue: Castle 2
1330–1405	Plenary: Mick Clout Bird conservation in last place on Earth

	Venue: Castle 1	Venue: Castle 2
	Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Cenozoic island biogeography: integrating geology, paleontology and phylogeny Northern connections: the success and failure of biological links with the Northern Hemisphere
1410–1430	Larry Burrows: Ecosystem carbon and grazing reduction on New Zealand montane tussock grasslands	Chris Burridge: Divergence of island biotas when they were not always islands
1430–1450	Luitgard Schwendenmann: Above- and below-ground carbon storage in tall snow tussock grasslands, New Zealand	George Gibbs: The islands of Zealandia: some thoughts on discrepancies between the maps of today and maps of the past for explaining modern biota
1450–1510	Alan Mark: The current conservation status and management of New Zealand's indigenous grasslands	Elizabeth Kennedy: Leaf fossils and palynofloras reveal a subtropical Early Eocene South Canterbury, New Zealand
1510–1530	Emily Weeks: Conservation planning in a changing landscape - New Zealand's indigenous grasslands	Kale Sniderman: Fossil and biogeographic evidence for the role of dispersal in the assembly of the Cenozoic Australian rainforest flora
1530–1600	Afternoon tea	
	Temperate indigenous grasslands: their conservation, values, resilience and sustainable management	Northern connections: the success and failure of biological links with the Northern Hemisphere
1600–1620	Ann Brower: New Zealand high country land reform	Darren Crayn: Who wins when north and south collide - the historical dynamics of intercontinental floristic exchange across Wallacea
1620–1640	Jean McFarlane: Cutting up the high country: the social construction of tenure review and ecological sustainability	Sarah Fayed: The role of diaspore evolution in the transoceanic disjunctions and the invasion into Asia of Roupaleae (Proteaceae)
1640–1700	Janine Wing: Burning tussock grasslands: effects on Amphipoda	Greg Jordan: One conifer's wall is another one's highway
1700–1720	Laura Rose: Land-use intensification in temperate grasslands: effects from leaf to ecosystem	Hans Peter Linder: Why are almost all danthonioid grasses in the Southern Hemisphere?
1720–1740	Discussion	Maria Gandolfo: Floral links between ancient Patagonia and the Northern Hemisphere
1740–1800		Pablo Guerrero: Matching and mixing among the amphitropical floras of the Americas
1930	Congress Dinner at the Savoy Restaurant	

Tuesday 22 January, AFTERNOON

	Venue: Burns 1	Venue: Burns 2
	Contributed papers	Contributed papers
1410–1430	Stephan Nylinder: Biogeography of <i>Calceolaria</i> L. (Calceolariaceae) - continuous diffusion patterns in the Andean mountain range	Sarah Wyse: Seeds on acid: does litter chemistry of <i>Agathis australis</i> (New Zealand Kauri) influence vegetation composition?
1430–1450	Chris Simon: Biogeography and phylogeny of cicada tribes worldwide as a model for the spread of cenozoic biodiversity	Grant Wardell-Johnson: Estimating carbon stocks in Australian forests to reduce carbon dioxide emissions and retain biodiversity
1450–1510	Mark Stevens: Antarctic meiofauna: a first step in understanding molecular operational taxonomic units (MOTUs) and biogeography of cryptic fauna	Mariana Musicante: Effects of landscape alteration on Hymenoptera trophic guilds at several scales of fragmentation in the Chaco forests of Cordoba, Argentina
1510–1530	Wim Vyverman: Bioregionalisation and evolutionary origins of freshwater Antarctic diatoms	Ainhoa Magrach: Forest disturbance shapes interactions between lianas-trees and epiphytic ferns
1530–1600	Afternoon tea	
	Contributed papers	Contributed papers
1600–1620	Matt Krosch: <i>Stictocladus</i> across the southern hemisphere	Kate Johnson: A preliminary investigation combining modern DNA and ancient DNA of the threatened <i>Araucaria araucana</i> (Pehuen) tree in central Argentina and Chile
1620–1640	Stephan Nylinder: Inferring biogeographic pathways in <i>Centipeda</i> (Asteraceae) by means of geographic diffusion in a species tree environment	Debra Wotton: Determining the drivers of plant rarity: a mechanistic approach
1640–1700	Steven Wagstaff: Origins of restiad wetlands in New Zealand	Andrea Loayza: Demography of <i>Myrcianthes coquimbensis</i> : a critically endangered shrub of the Atacama Desert
1700–1720	Mohammad Javidkar: Molecular phylogeny and morphology of the <i>Platyarthridae</i> (Crustacea: Isopoda) with a focus on the Australian fauna	Francisco Squeo: Towards the creation of an integrated system of protected areas in Chile
1720–1740	Stephan Nylinder: Species tree phylogeny and character evolution in the genus <i>Centipeda</i> (Asteraceae)	Brad Case: New Zealand treelines in the Southern Hemisphere context: an overview of patterns and processes
1740–1800	Fernanda Perez: Evolution of climate niche, functional traits, and freezing resistance in <i>Myrceugenia</i>	Ellen Cieraad: Re-assessing growing season definitions in oceanic and continental treeline climates
1930	Congress Dinner at the Savoy Restaurant	

Wednesday 23 January, ALL DAY

Mid-Congress Field Trips

Wednesday 23 January, EVENING

Time

Venue: Castle 2

1930–2100

PUBLIC LECTURE: Professor Lesley Hughes Southern Hemisphere biodiversity in a changing climate: 2050 & beyond

Thursday 24 January, MORNING

Time	Venue: Castle 2
0840–0915	Plenary: Alexander Schmidt Ambers of Gondwanan origin: rare or unexplored windows into terrestrial paleoecosystems?

	Venue: Castle 1	Venue: Castle 2
	Wildfire regime shifts in temperate forest ecosystems	Amber: paleontological potential for the Southern Hemisphere
0920–0940	Andres Holz: Interannual fire-climate teleconnections across the southern temperate latitudes	Daniel Bickel: Baltic amber, extinction and the problem of "pseudo-Gondwanic" distributions
0940–1000	Philip Higuera: The changing nature of fire-climate relationships in the U.S.	Christina Beimforde: The potential of fossils preserved in amber for calibrating the molecular clock: An estimation of the Phanerozoic history of the Ascomycota
1000–1020	Bob Keane: Simulating disturbance, climate, vegetation, and human interactions and feedbacks on western US landscapes using landscape modeling	Jouko Rikkinen: Resinicolous <i>Mycocaliciales</i> - new findings from Southern Hemisphere forests and European amber
1020–1040	Richard Williams: Climate change and fire regimes in Australian temperate eucalypt forests: what might climate change mean for risk mitigation?	Uwe Kaulfuss: Discovering the New Zealand amber forest biota
1040–1110	Morning tea	
	Wildfire regime shifts in temperate forest ecosystems	Amber: paleontological potential for the Southern Hemisphere/ Contributed papers
1110–1130	Juan Paritsis: Regional-scale analysis of spatial fire occurrence in western Patagonia: vegetation type, humans and feedbacks	Nicholas Powell: Paleochemotaxonomic investigation of Tertiary fossil resins from southern New Zealand by gas chromatography mass spectrometry: preliminary results
1130–1150	George Perry: Fire, invasion and ragamuffin ecosystems	Leyla Seyfullah: Southern Hemisphere forests shedding light on reasons for amber accumulations
1150–1210	David Bowman: Contracting Tasmanian montane grasslands within forests matrix is consistent with cessation of Aboriginal fire management	Ilse Breitwieser: The next generation of New Zealand floras
1210–1230	Mark Cochrane: Fuel treatment effectiveness in the United States: assessing site- and landscape-level effects of fuels treatments on wildland fires	Norman MacLeod: Improving the accuracy and consistency of taxonomic identifications in climate change studies
1230–1330	Lunch	

Thursday 24 January, MORNING

	Venue: Burns 1	Venue: Burns 2
	Predictions from climate change: benefits and losses for southern reptiles and amphibians	Southern radiations: processes driving diversification
0920–0940	Phil Bishop: How will New Zealand frogs fare in the face of climate change?	Hans Peter Linder: Pre-requisites and drivers for radiations in the Cape flora
0940–1000	John Measey: Mixing models and molecules for southern African amphibians: lessons from the last glacial maximum and into the future	Michael Matschiner: The origins and triggers of teleost radiations in the Southern Hemisphere
1000–1020	Jean-Marc Hero: Amphibians, stress and disease at high elevation: implications for understanding resilience to climate change	William Lee: Radiations and community assembly: adaptations and historical contingency
1020–1040	Carlos Navas: Consequences of climate change on herpetofauna: limits to ecological inference based on physiological data	Kristen Nolting: The historical imprint of climatic niche evolution on present day coexistence in New Zealand <i>Coprosma</i> (Rubiaceae)
1040–1110	Morning tea	
	Predictions from climate change: benefits and losses for southern reptiles and amphibians	Southern radiations: processes driving diversification
1110–1130	Michael Kearney: Climate change and the thermodynamic niche of reptiles	Scott Groom: Diversification of halictine bees in the south-wester Pacific
1130–1150	Ruchira Somaweera: Changing climates, monsoonal floods and freshwater crocodiles	Matthias Becker: Polyploid evolution in New Zealand's alpine buttercups - insights from high-throughput sequencing and fine-scale climate measurements
1150–1210	Alison Cree: Variation in pregnancy rates across time and space in a cool-climate lizard: is there a relationship with temperature?	Steven Cooper: Species diversification underground versus colonisation from the surface in a radiation of subterranean diving beetles from the Western Australian arid zone
1210–1230	Nicholas Powell: Are cryophily and nocturnality of New Zealand's 'ancient endemics' legacies of Cretaceous polar cold and darkness?	Mark Stevens: A single dispersal out of Australia followed by remarkable global colonization by the bee genus <i>Hylaeus</i> (Colletidae)
1230–1330	Lunch	

Thursday 24 January, AFTERNOON

Time	Venue: Castle 2
1330–1405	Plenary: Angus McIntosh Trophic interactions in a waterscape context: embracing the meta-ecosystem concept for freshwater conservation

	Venue: Castle 1	Venue: Castle 2
	Wildfire regime shifts in temperate forest ecosystems	New Caledonia: understanding an enigmatic biota
1410–1430	Susana Paula: Fire and resprouting: an evolutionary perspective from Chilean plants	Steve Trewick: New Caledonia: the myth of isolation
1430–1450	Norman Mason: Exaptation explains interspecific variation in the flammability of the New Zealand flora	Philippe Grandcolas: Updating the dating: how old is New Caledonia biodiversity?
1450–1510	Alan Tepley: Post-fire vegetation dynamics and feedbacks on fire susceptibility along a 150-year chronosequence in <i>Nothofagus</i> forests of New Zealand	Pete Hollingsworth: Insights into historical and contemporary differentiation in New Caledonian <i>Araucaria</i>
1510–1530	Neal Enright: Resistance/resilience to changing climate and fire regime varies between plant functional trait groups	George Gibbs: Micro-moths reveal ancient New Zealand-New Caledonia links
1530–1600	Afternoon tea	
	Wildfire regime shifts in temperate forest ecosystems	New Caledonia: understanding an enigmatic biota/ Contributed papers
1600–1620	Gabriel Yospin: Simulated climate-sensitive interactions between vegetation dynamics and wildfire in an agent-based model of land-use change	Ulf Swenson: Are Sapotaceae supporting or rejecting the notion that New Caledonia is a very old Darwinian island?
1620–1640	Alvaro Gutierrez: Post-fire successional trajectories of temperate rainforests: synthesizing empirical knowledge into models for predicting forest dynamics	Philippe Grandcolas: What kind of relict is <i>Amborella trichopoda</i> in New Caledonia?
1640–1700	Sam Wood: Firescape ecology; how topography determines the distribution of fire and rainforest in the southwest of the Tasmanian Wilderness World Heritage Area	Jerome Munzinger: Insights into the ecology and biogeography of <i>Amborella trichopoda</i> : intraspecific genetic differentiation in New Caledonia
1700–1720	Michael-Shawn Fletcher: What is the long-term role of fire in the dynamics of long-lived southern conifer plant communities? A case study from southern Tasmania	Raymond Carpenter: Fossils and forests: a botanical tour of New Caledonia
1720–1740	Philip Ladd: Season of prescribed fire is important for reproductive success in a species with fire stimulated reproduction	Ulf Swenson: Towards a natural classification of Chrysophylloideae (Sapotaceae) in Oceania and Southeast Asia based on nuclear sequence data
1740–1800	Raquel Lopes dos Santos: Evidence of a massive shift from C ₄ to C ₃ plants and biomass burning AFTER the megafaunal extinction in SE Australia from a deep-sea core record	Marianne Horak: Redefining Bucculatricidae: a sister group with a southern distribution largely associated with <i>Eucalyptus</i> vis-a-vis <i>Bucculatrix</i> (Lepidoptera)
1800–1820	David Tng: Giant eucalypt forests - a globally unique fire-adapted rain forest?	Moinuddin Ahmed: Population structure and dynamics of mangrove ecosystem

1800–2000	Poster and film session in the University College (UniCol) Common Room followed by Future Voices: Films from Otago and Montana	
Thursday 24 January, AFTERNOON		
	Venue: Burns 1	Venue: Burns 2
	Chile/New Zealand: The continental scale experiment	Southern radiations: processes driving diversification
1410–1430	Juan Armesto: Forests of southern Chile and New Zealand: how are similarities and differences in structure reflected in ecosystem functioning?	David Orlovich: Phylogenetic trees and tree violets: making sense of the <i>Melicytus alpinus</i> species complex
1430–1450	Patricio Moreno: Climate and vegetation change over the last 3000 years in southern Chile and New Zealand	Samuel Brown: Biogeography of the New Zealand grassland weevil genus <i>Irenimus</i>
1450–1510	Luis Hinojosa: Climatic niche conservatism in <i>Nothofagus</i> genus	Ladislav Mucina: Evolutionary assembly of floras and vegetation in saline landscapes: Southern Hemisphere (Dis)Connections
1510–1530	Fiona Thomson: Dispersal syndromes in the temperate forests of Chile and New Zealand: importance of current climate and past constraints	William Humphreys: Subterranean connections: the ultimate phylogeographic tool for Gondwanan biogeography?
1530–1600	Afternoon tea	
	Chile/New Zealand: The continental scale experiment	Ecological restoration: across the land and sea
1600–1620	Juan Celis-Diez: Frugivory and seed dispersal in Chile and New Zealand: contemporary processes and network structure	Stephen Hartley: Stressed and disturbed: experimental ecorestoration
1620–1640	Aurora Gaxiola: Contrasting spatial and temporal partitioning of humid forest landscapes in Chile and New Zealand	James Russell: Empirical measures for successful restoration of seabird island ecosystems after invasive mammal eradications
1640–1700	Cecilia Perez: Contrasting patterns of soil N and P limitation in early stages of glacial chronosequences in Chile and New Zealand	James Griffiths: Project Kaka; Understanding the efficacy of 3 yearly pre-fed aerial 1080 applications for large scale forest restoration
1700–1720	Anibal Pauchard: Beyond Gondwana: How similar are the non-native floras of New Zealand and Chile?	James Reardon: Takahe and the Murchison Mountains: species recovery to ecosystem restoration
1720–1740	Discussion	Victoria Froude: Measuring progress towards ecological restoration goals that seek environmental naturalness
1740–1800		Discussion
1800–2000	Poster and film session in the University College (UniCol) Common Room followed by Future Voices: Films from Otago and Montana	

Friday 25 January, MORNING

Time	Venue: Castle 2	
0840–0915	Plenary: Janet Wilmshurst New insights into lost animal-plant ecological linkages in New Zealand: fossil evidence for past pollinators, seed dispersers, seed predators, and herbivores	
	Venue: Castle 1	Venue: Castle 2
	Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	New insights into the ecological consequences of late Quaternary Southern Hemisphere extinctions
0920–0940	Michael-Shawn Fletcher: Medieval megadroughts, how wide-spread were they? Evidence from the Southern Hemisphere extra-tropics	Jamie Wood: Using ancient dung to learn about the ecology of extinct species
0940–1000	Patrick De Deckker: High-resolution Holocene records from two adjacent crater lakes in western Victoria: new information for comparison across the Southern Hemisphere	Janet Wilmshurst: Can <i>Sporormiella</i> help resolve the sequence of events in late Quaternary ecosystem change?
1000–1020	Klaus-G. Zink: Lipid-based paleotemperature reconstructions for the late Quaternary in southern New Zealand, part 1: development of methodology	Nicolas Rawlence: The effect of climate and environmental change on the megafaunal moa of New Zealand in the absence of humans
1020–1040	Marcus Vandergoes: Lipid-based paleotemperature reconstructions for the late Quaternary in southern New Zealand, part 2: preliminary applications	George Perry: Using agent-based modelling to explore the dynamics of megafaunal extinctions
1040–1110	Morning tea	
	Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	New insights into the ecological consequences of late Quaternary Southern Hemisphere extinctions
1110–1130	Jessica Reeves: A funny thing happened on the way to the glacial: lake records of climate variability in Australia before and after the last glacial	Claudio Latorre: Late Quaternary refugia, extinctions and extra-terrestrial impacts: lessons from the Atacama
1130–1150	Paul Augustinus: Last glacial cycle environments in northern NZ	Alan Cooper: Megafaunal extinctions in Late Pleistocene Patagonia
1150–1210	Ana Abarzua: 24,000 cal. years of vegetation and climatic changes in a south-central Chilean maar (39°S)	Catherine Collins: Assessing the impact of human settlement and historic hunting on the New Zealand sea lion, <i>Phocarctos hookeri</i> , using ancient DNA analyses
1210–1230	Ignacio Jara: A new pollen record from northwest Nelson, New Zealand	Matthew Prebble: Megaflora extinction in the Southern Hemisphere: Holocene fossil records from Polynesia
1230–1330	Lunch	

Friday 25 January, MORNING

	Venue: Burns 1	Venue: Burns 2
	Origins, functioning and futures of Subantarctic Ecosystems	Learning more about wilding tree management
0920–0940	Colin Meurk: Bio-climatic zonation in the subantarctics and likely consequences of climate change	Nick Ledgard: Where are we with wilding conifer management in New Zealand?
0940–1000	Richard Winkworth: Origins and evolution of plant diversity on the southern lands: new insights from large phylogenies	Anibal Pauchard: Invasive conifers in South America: Moving from assessment to management
1000–1020	Frangoise Hennion: Variance and covariance of traits in plant species across abiotic gradients in the sub-Antarctic Kerguelen Is. and significance for adaptive potential	Brian van Wilgen: Where are we with wilding tree management in South Africa?
1020–1040	Janice Lord: Sex in the south: pollination biology of subantarctic megaherbs	Yvonne Buckley: Wilding tree management and research in Australia and spread in New Zealand
1040–1110	Morning tea	
	Origins, functioning and futures of Subantarctic Ecosystems	Learning more about wilding tree management
1110–1130	Shelley McMurtrie: Water and sediment quality of Campbell Island	Thomas Paul: Basic research supporting wilding conifer management in New Zealand
1130–1150	Colin Meurk: Marine subsidies to subantarctic terrestrial environments	Peter Raal: Operational research supporting wilding conifer management in New Zealand
1150–1210	Alexander Fergus: Reconstructing the recovery of subantarctic Campbell Island	Anibal Pauchard: <i>Pinus contorta</i> as a model species for global research on invasive trees: insights from Patagonia
1210–1230	Valdon Smith: Changes at sub-antarctic Marion Island: factual, anecdotal and fantastical	Bruce Maxwell: Modelling wilding spread for managers - how practical is it?
1230–1330	Lunch	

Friday 25 January, AFTERNOON

Time	Venue: Castle 2
1330–1405	Plenary: Jon Waters Extinction and recolonisation in the Southern Hemisphere: trans-oceanic connectivity mediated by priority effects?

	Venue: Castle 1	Venue: Castle 2
	Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	New insights into the ecological consequences of late Quaternary Southern Hemisphere extinctions Southern biological connectivity, the effect of the WWD
1410–1430	Robert Spicer: Foliar physiognomy and palaeoclimate on a global stage: bringing New Zealand into line	Andrew Tanentzap: Are ecological ghosts haunting New Zealand? Native plants respond to functional analogues of extinct megafauna
1430–1450	Tammo Reichgelt: Paleoclimate and paleoecology of the Early Miocene Foulden Maar, Central Otago	Chris Johnson: Variation in the impact of megafaunal extinction on vegetation in Pleistocene Australia
1450–1510	Bethany Fox: Mi-1 deglaciation characterised by abrupt short-term cooling events	Peter Convey: How connected are the sub-antarctic islands?
1510–1530	William D'Andrea: Orbital pacing of New Zealand hydroclimate during the Early Miocene: Biomarker and compound-specific isotope records from the Foulden Maar diatomite	Ceridwen Fraser: The Southern Ocean as a barrier to north-south dispersal: lessons from biological range shifts with past climate change in the Southern Hemisphere
1530–1600	Afternoon tea	
	Paleoclimate of the Southern Hemisphere viewed from lakes: linking records spanning tropical Queensland to southern Patagonia	Southern biological connectivity, the effect of the WWD/ Contributed papers
1600–1620	Francesca McInerney: Can leaf wax n-alkane distributions be used to reconstruct plant communities?	Martin Thiel: Lost at sea? The biology of kelp rafting in the southern hemisphere
1620–1640	Tammo Reichgelt: Miocene terrestrial climate from floral proxies of Otago, New Zealand	Raisa Nikula: Southern scales of gene flow and colonization by kelp-rafting
1640–1700	Giselle Astorga: Little bits and pieces: "A sub-alpine lacustrine plant macrofossil record from south-central Tasmania"	B Trovant: Deceptive uniformity and the WWD connection: Phylogeographic diversity among intertidal bed-forming mussels in South America (Brachidontes, Mytilidae)
1700–1720	Maria Laura Carrevedo Goytia: Environmental variability and resource use of an Andean lake inferred using fossil diatoms	Kym Abrams: Diversity 'down under': molecular phylogenetics and biogeography of the ancient subterranean Australian Parabathynellidae (Syncarida, Crustacea)
17.25	Closing Ceremony: Glenn Stewart, President Southern Connection Congress in Castle 2	

Friday 25 January, AFTERNOON

	Venue: Burns 1	Venue: Burns 2
	Change, disaster, resilience and future-proofing of urban environments	Learning more about wilding tree management
1410–1430	Glenn Stewart: Urban change ecology	Keith Briden: Managers attitudes and needs relative to future research assistance for wilding conifer management
1430–1450	Colin Meurk: Succession, assembly rules and going with the flow in disrupted cities	Richard Bowman: The role of local government in managing wilding conifers and supporting related research in New Zealand
1450–1510	Sarah Peters: Urban forest of residential Auckland: variation in structure, composition and resilience	Nick Ledgard: New Zealand Wilding Conifer Management Group - how successful?
1510–1530	Yolanda van Heezik: Starting from scratch: a wish-list for wildlife in the city	Andrew Macalister: The role of community groups in wilding management
1530–1600	Afternoon tea	
	Contributed papers	Learning more about wilding tree management/ Contributed papers
1600–1620	Stéphane Boudreau: Recent warming in Kangiqsualujjuaq, Nunavik: more shrubs, more trees, less berries?	Victoria Froude: A collective approach to identifying opportunities and solutions for improving wilding conifer management in New Zealand
1620–1640	Erik Veneklaas: Will climate change cause shifts in abundances of sympatric eucalypt species? Insights from responses to seasonal drought	Discussion
1640–1700	Carla Piantoni: Too hot out there! Let's hide in the forest!	
17.25	Closing Ceremony: Glenn Stewart, President Southern Connection Congress in Castle 2	

Poster Session Programme

Thursday 24 January

1800–2000 Poster Session

Venue: University College (UniCol) Common Room

Presenter	Title
Anna Astorga	Macroinvertebrate diversity in fluvial ecosystems of the Chilean Patagonia: the role of contemporary environmental factors
Josefina Cabezas	Simulating the effects of climate change on the phenology and fructification of <i>Rhodophiala rhodolirion</i> (Baker) Traub. (Amaryllidaceae)
Rixt de Jong	Lake sediments in the Chilean Andes; records of past variability in the Southern Hemisphere westerlies?
Francisca Diaz	The role of climate and biotic interactions on the nitrogen cycle in the Atacama Desert
Scott Groom	Diversity and origins of Melanesian leaf cutter bees
W I Henriquez-Gonzalez	Postglacial vegetation, climate and fire history during the last 17,500 years in Valle Chacabuco
Felicitas Hopf	A high resolution late Glacial / Holocene record from Lake St Clair, Tasmania
Marion Johnson	Indigenous Agroecology –agricultural stewardship and conservation in Aotearoa New Zealand
Jessica Leigh	PopART: Cross-platform population genetics software
Elizabeth Maciunas	Effects of an Australian native parasitic plant on invasive and native hosts
Karina Martinez-Tilleria	Subsidies ecosystem as conservation targets
Matias Mastrangelo	Tradeoffs between cattle production and bird conservation in an agricultural frontier of the Gran Chaco of Argentina
Dallas Mildenhall	Diversity following volcanic destruction: palynology of the Early Miocene Foulden Maar, Otago, New Zealand
Gisela Sancho	Phylogenetic studies in <i>Lagenophora</i> Cass. (Lagenophorinae, Asteraceae): A phylogenetic approach to a trans-Pacific genus
Krystyna Saunders	Multi-decadal precipitation and westerly wind variability in the mid and high latitudes of the Southern Hemisphere over the last 1000 years
Manu Saunders	Pan trap catches of pollinator insects vary with habitat context
Laura Stahle	A 20,000-yr long record of wildlife activity from Frenchmans Cap, Tasmania, Australia
Matthew Taylor	Cryptic diversity in the South Pacific lizard genus <i>Eugongylus</i> (Reptilia; Scincidae; Lygosominae)
Olivia Vergara	Geographic distribution and historical occurrence of <i>Chiasognathus grantii</i> in Chile and Argentina

Rodrigo Villa-Martinez	Vegetation and climate changes along the forest-steppe ecotone in central-south Patagonia (47°-51 °S) during and since last glacial termination
Ahln Watban	Pollen morphology of some wild <i>Acacia</i> species growing in Saudi Arabia
Carla-SophieWichmann	Floating kelps in Patagonian Fjords - an important vehicle for rafting invertebrates and its relevance for biogeography
Richard Winkworth	Antarctica helped shape Southern Hemisphere plant distribution patterns